

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LXVII.

SATURDAY, NOVEMBER 9, 1895.

No. 19.

ORIGINAL ARTICLES.

A THEORY OF THE CAUSATION OF PERMANENT DEMENTIA.

BY HENRY J. BERKLEY, M.D.,
OF BALTIMORE, MD.

THE silver-chromate method of impregnating the nerve-elements shows, beneath the pial surface of the cerebral cortex, one of the most complicated arrangements of the elements to be found in the cerebrospinal axis. By any manner of silver-staining we find in this region a diversity of impregnation; in some nothing but the cells to the free limits of the dendrons are tinged, while in others the nerve-fibers with their end-apparatus intermingled with but few cellular bodies appear. More rarely both fibers and cells are stained in the same section. The differences appear to depend on some unknown quality in the hardening process. Accordingly, there is in this portion of the brain-surface a most intricate intermingling of the protoplasmic extensions of the peculiar class of nerve-cells of the cortex with fibers and endings of fibers of several degrees of fineness, some of them coming from distant regions, others arising from cells in the immediate vicinity of the pial limit.

A glance at a large number of stained sections reveals that these fibers are of different origin, and by their diameter and other characteristics they may be differentiated into several groups:

(a) Fibers of considerable diameter that arise out of the medullary masses at the foot of the cellular layers and pass upward, giving off a few collaterals *en route*, finally terminating in forked free endings, chiefly in the lower and mid-planes of the molecular layer. The origin of these fibers is in great part unknown; probably the majority come from the cells of the opposite hemisphere, the spinal cord, the cerebellum, and the medulla.

(b) Fibers that arise from small cells situated in the deeper layers of the cortex, pass upward between the bodies of the pyramidal cells, and eventually terminate, after a series of branchings, in the molecular layer.

(c) Fibers of small caliber that come from the Golgi intermediary cells, and only reaching the lowermost limits of the molecular layer end among the thicker portions of the dendrites of the pyramidal cells.

(d) Axons from the angular and fusiform cells of the molecular layer that do not as a rule pass beyond the limits of that layer.

(e) Collaterals from the descending axons of the pyramidal cells of both larger and smaller varieties that turn upward and terminate, some within the limits of the second layer, others at a higher level.

A research that I made a few years ago¹ with a very fine medullary stain developed the fact that the greatest number of the finer fibers of the cortex were medullated almost to the extremities of the end-terminations, and confirmed the results previously obtained by Flechsig. Furthermore, unmedullated fibers of any length were found to be extremely rare. These conclusions we must still adhere to, as staining with the chrome-silver does not enable one to say definitely whether a fiber is medullated or not, and besides it is highly probable that a thin membranous cover may surround the axis-cylinder after the medullary matter is lost, and that in no instance, except at the free termination, is there actually such a thing as a naked axis-cylinder. Therefore, we conclude that the conduction of the nerve-force from cell to termination, and from termination to cellular protoplasm again, is only through the medium of the ending of the nerve-fiber, and that there is no diffusion of the dynamic forces through the cortex, but that the action is a direct one.

The nerve-cells of the cortex that principally occupy our present attention are the so-called psychic cells—the pyramidal cells of both the long and short ascending-process varieties. The cells having short apical processes occupy mainly the uppermost regions of the second lamina, and have almost straight ascending processes penetrating into the molecular layer among the intricate endings of all the varieties of nerve-fibers described as located in this region. The pyramidal cells with long apical processes are situated, generally speaking, on a lower plane than those of the short variety, are of larger size, and are distinguished by the extreme length of the apical process and the richness of its stem and branches in lateral buds.

Both varieties of pyramidal cells are distinguished from other forms of nerve-elements in the cortex by the richness of the lateral protoplasmic buds or gemmulæ. These gemmulæ only begin on the

primordial process beyond where the capsule commences to lose its definiteness under the microscope. The apical gemmule are furthermore differentiated from those belonging to the basal dendrites by several inherent characteristics. In the first place, their direction in respect to the protoplasm of the stem is different, the gemmule of the apical process, beginning at the edge of the stem as an almost imperceptible thread, stands out directly at a right angle with the protoplasm, then gradually increasing very slightly in diameter it ends in a rounded button or knob, which is stained intensely black. The gemmule at a little distance above the lymph-space are arranged with great regularity, and are shorter and thicker than more distal ones. As the protoplasmic processes lengthen out, the distance between them increases perceptibly, and they assume more of the appearance of a thin twig adherent to the dendrite. At the terminations of the finer dendrons the gemmule are more luxuriant, in the sense of being longer, than near the cell-body.

While the lateral buds of the basal processes have practically the same form as those on the apical branches, the closely set rectangular arrangement of the buds is wanting; they are obliquely set, longer, and resemble closely those of the terminal dendrons on the highest portion of the ascending twigs.

Occasionally one may be called upon to distinguish a subvariety of gemmule. Here and there one is met that is longer than its fellows, stouter in its attachment to the protoplasm of the stem, and has a subdivision into two terminal arborizations. Differences in the function of these two varieties, if present, are of course unknown.

The only other variety of cortical cell we are now especially interested in is the angular Golgi cell of the middle layer, whose single axon turns upward toward the molecular lamina, terminating among the extensions of the pyramidal cells in the middle regions after a number of subdivisions.

The disposition of the axons in the middle layers of cells is somewhat different from the same structures in the higher regions. The thick, ascending fibers coming from the medullated masses give off few collaterals in the mid-regions, but pass higher up, where they come into close contact with the terminal twigs of the pyramidal cells. The axons from the intermediary cells, on the other hand, do not pass up so high, and may be seen coursing closely to the protoplasm of the thicker portions of the basal and apical dendrites. Collaterals from the descending axons of the pyramidal cells also return toward the surface, and may be seen to end in terminal varicosities against the protoplasm of the dendrites of other cells. Lastly, a large number of fine threads, coming, mainly, from the thicker fibers, are seen forming nests around the

bodies of the pyramidal cells, and by their terminations distribute their dynamic forces directly to the protoplasm of the corpus, and, in especial, the region of the nucleus.

It would thus appear that the nervous stimuli reach the cell in several ways, and that each cell is influenced by a variety of stimuli arising from a number of cells, situated both intrinsic and extrinsic to the convolution. It would also seem that the protoplasmic processes of the neuron conduct impulses downward to the body of the cell, from the fibers terminating upon the dendritic processes. Stimuli may also be carried upward from the basal processes to the cell-body, and, besides, there is the nest of fine terminal fibers surrounding the cell-body proper.

It has seemed to me that the difficulty the dynamic forces, from the nerve-endings of this latter terminal arrangement, have in reaching the cellular protoplasm is very great, as they are obliged to pass through the cell's capsule as well as the fluid in the lymph-sac before being able to excite, dynamically, the cellular protoplasm. On the other hand, the protoplasmic extensions, at least the finer ones, are to all appearances free from covering, or, if covered by any membrane, this must be of exceeding tenuity, and of a character that cannot greatly interfere with the passage of the stimuli from the terminal ending of the nerve-fiber.

Personally, I am inclined to the belief that the dendron is furnished with some retaining membrane of infinitesimal thinness, and imperceptible by any of the ordinary methods of staining, and through which the stems of the gemmule pass, to come into contiguity with the free extremities of the nerve-endings, and, accordingly, there is only at these points free protoplasm.

We have, therefore, two possible ways in which the nerve-stimuli from extraneous sources may reach the corpus of the cell: First, the conduction from the primitive and secondary dendrites to the body of the cell; and, secondly, the direct propagation of a stimulus from the surrounding fine fibers to the corpus of the cell. Apparently, from the wide expansion of the dendrons and greater capabilities for the direct reception of a stimulus, it would seem that at this higher level they received a greater proportion of the impulses coming through the numerous sources to the upper portion of the middle and to the molecular layer, and that the terminations around the body of the cell were of secondary importance in the sensorimotor economy.

The question at length arises in what manner do the twigs of the dendrites receive the stimuli from the nerve-fibers. We have already seen that the dendritic twigs have arising out of the lateral aspects of their protoplasm large numbers of thin, pin-like processes, and that around these coil fine

axis-cylinders, usually provided with short rectangular branches ending in small varicosities. These axons ascend with the dendrons toward the pial limit, and are met in the molecular layer by large numbers of terminal branches from a variety of sources. Now the fibers that ascend with the dendrites are fine varicose, and coil very closely around the buds, twisting in and out between them, and eventually terminate in bulbar endings that closely approximate some of the knob-like tips of the gemmules.

To suppose for an instant that naked axis-cylinders are present in considerable numbers in the cortex is to me an impossibility, for we must necessarily suppose in such an event that in the closely packed arrangement of axons and dendrons presented by the outer portion of the pyramidal and in the molecular layer, where fibers and dendrites touch each other in all directions, the stimuli would quite as often be aberrant as direct, and as frequently reach the wrong as the right destination. Naked axis-cylinders are in all likelihood a physiologic impossibility in the cerebrum, for were they numerous we can suppose nothing but a constant overflow of stimuli from one cell to another, and consequent incoördination not only of thought, but also of action.

In what manner, then, do the axons influence the protoplasm of the dendritic twigs and corpora? Strictly and only by the uncovered free-ending coming into close contiguity with the knobs of the gemmule of the dendrons, the nerve-impulses being continued through the medium of the gemmule to the dendrite, and through it to the body and nucleus of the cell. Around the lateral buds of the dendrons we have often remarked the fine fibers coiling. In the majority of the preparations it is impossible to find more than the thread of the varicose fiber, but in exceptionally successful preparations numbers of the free, knobby and forked terminations may be found to end in close proximity to the gemmule of the dendrons; so close, indeed, that it is not easy to determine whether the two touch one another or not. We are inclined to believe that they do not, as in some instances there is a perceptible interval, while in others the slightest overlapping would produce the effect of a direct contact. The construction of the gemmule is peculiar from the fact that the distal portion is much broader than the basal, and well adapted for the reception of an impulse on the broad knob. Contractile movements of the cell are certainly to be considered in the contact, as it may possibly be that at certain times, when the dynamic forces are passing from fiber to cell, the end of the fibre and the gemmule are in direct adaptation, one with the other.

In a considerable number of cases of terminal

dementia, or dementia from the effects of alcohol, and from other poisons that act unfavorably upon the protoplasm of the nerve-cell, we have found a disappearance of the gemmule, particularly those upon the primitive dendrons of the pyramidal cells. The disappearance of the buds may be only from the finer twigs of the apical dendron, or may ex-

FIG. 1.

FIG. 2.



FIG. 1.—Photograph of a portion of a normal primordial process of a psychic cell of the long apical-process variety, showing very numerous and well-developed gemmule along the sides of the stem. From the brain of a well-educated man who was executed for crime, and the autopsy performed immediately after death. Enlarged 560 diameters. (Photo. by DR. A. G. HOEN.)

FIG. 2.—Photograph of a portion of a primordial process of a psychic cell of the long apical-process variety, showing almost total absence of the gemmule along the sides of the stem. From the brain of a case of terminal dementia, the subject dying at the age of fifty-two years. Both specimens were taken as nearly as possible on a similar plane. Enlarged 560 diameters. (Photo. by DR. A. G. HOEN.)

tend further downward to the thicker portion, or may even involve the basal dendrites. In any event, the buds disappear from the diseased portions of the dendrites, and in the following manner: A local swelling of the protoplasm of the twig usually, though not invariably, makes its appearance; the gemmule lose the intensity of their staining, and finally one by one vanish completely; and the dendrite, in the intervals of the swellings, becomes reduced to a thin thread, or, when the morbid process is far advanced, to a stump.

Now, as already indicated, we have conceived the theory that the function of the gemmule is to receive the nervous impressions from the fiber, to transmit them to the protoplasm of the dendron, and thence to the cellular body. Once the gemmules lose their vitality or in any way become diseased, conduction of nerve-impulses is no longer possible,

and the coördination of the cellular elements ceases. Confusion of thought is at first the result; then, as the morbid process grows deeper and more widespread, coördinated thought almost entirely ceases, and a terminal dementia follows as a natural sequence. In this decadence of the mental powers it is unnecessary to suppose that all the nerve-elements, from their complex relations by means of their axons, are necessarily degenerated.

It is not considered for a moment that the cell-body and its surrounding nerve-terminations play an unimportant part in the progress of the deterioration; only, as the dendrites are the more delicate and sensitive to the effect of an injury from the impression of toxic or other disturbances of whatever nature, they suffer first, and afterward the degeneration of the cell-body plays a secondary but equally important part.

While all these changes are taking place in the protoplasmic extensions of the cell, the axon shows little or no change, but the resistance of the axon and its collaterals to destructive influences is very great, and only after the practical death of the cell's corpus—except in cases of actual inflammation of the tissues—can its involvement come into play. Neurons having their processes totally degenerated, and their bodies reduced to stumps, have still as perfect axis-cylinders and collaterals as the normal cell, and with large numbers of such cells we have been able to trace axons from their origin at the basal end of the cell-body down to the medullated masses, and their collaterals to their varicose endings.

To resume, we repeat that the conduction of the nerve-stimuli to the cell-corpus is principally achieved through the medium of the lateral buds or gemmæ, and that these delicate portions of the cellular protoplasm are the first divisions of the nerve-body to atrophy and disappear in certain diseases of the brain; then, from the loss of direction as well as from the want of originative impulses, incoördination of thought and motion results, and finally a permanent dementia is the consequence of a widespread degenerative process involving large numbers of the cortical neurons.

Our conclusions have been drawn partly from the cerebra of the human being, partly from the cerebra of small animals systematically poisoned by the action of various toxins exerting a destructive influence upon the cerebral nerve-cells.

Dr. N. O. Werder has been elected Professor of the Diseases of Women in the Western Medical College in succession to *Dr. W. J. Asdale*, resigned.

The Pasteur Institute.—*M. Decléus* has been elected director and *M. Roux* subdirector of the Pasteur Institute in Paris.

SOME REMARKS ON ANESTHESIA FROM ETHER AND CHLOROFORM.¹

BY SAMUEL M. BRICKNER, A.M., M.D.,
OF NEW YORK.

It is well for us occasionally to pause in the midst of routine practice to inquire whether the methods that have characterized our work are the correct ones, in view of modern light, and whether we can improve upon them to our own satisfaction, and to the welfare of those who see fit to put themselves under our professional guidance and care. I have chosen this subject because it is trite and well-worn, and because comparatively few men, in my relations and experience, seem to attribute sufficient importance to the total abolition of consciousness and sensation that we call anesthesia.

Complete narcosis is always dangerous, though the anesthetist be ever so expert, though the patient have been operated upon successfully many times, though the apparatus and material be of the most superior quality, the fear that a sudden fatality may supervene cannot be shaken off. If ether be used as the narcotizing medium, there may occur sudden respiratory paralysis, vomiting with inhalation of the vomitus, or a remote broncho-pneumonia. Should chloroform have the preference, the patient is under danger of syncope or of a parenchymatous hemorrhage from relaxation of the arterioles. Instances are not far to seek of fatal issue in narcosis from both ether and chloroform. Every physician can recall cases in his own experience or in that of his friends. Nor is the outlook any brighter for the other general narcotics. The A. C. E. mixture of Billroth has its record of deaths; and, indeed, from its very composition it is a dangerous anesthetic, for the fluids do not evaporate at equal rates, and the purpose of the alcohol and ether—to stimulate cardiac action after its depression by chloroform—is defeated, since first the ether evaporates, then the chloroform, and finally the alcohol. The patient is, therefore, first under the influence of the ether, and during the latter period of his narcosis almost completely under that of the chloroform.

Of nitrous-oxid gas and ethyl bromid it is scarcely worth while to speak, for the former can be used only for short periods of time, and the latter, though recently again having established a temporary hold, met its death-blow in 1881, shortly after its introduction as an anesthetic, by causing two deaths from unquestioned syncope.

General sensory and motor anesthesia for surgical purposes is so sublime in its conception and gives the profession such an ideal fortification, is such a boon to those who must go under the knife and

¹ Read before the Metropolitan Medical Society, New York, September 24, 1895.

who struggle in travail, that it becomes the sacred duty of all who have taken the Hippocratic oath to mitigate the dangers of narcosis to the man who suffers from a compound fracture and to the woman in the throes of labor. He who does not give his attention to every detail of anesthesia, and still considers himself competent to administer ether or chloroform, is like the surgeon who has never studied anatomy, and of whom Sir Astley Cooper said: "I would not remain in the room with a man who attempted to perform an operation without a knowledge of anatomy; he can but mangle the living if he have not operated on the dead." Knowing his own weakness, and still daring to risk his patient's life, a physician should be considered a fit subject for practice by a "sharpened form of the cephalotome or by that modification of the fillet which is called into use under other circumstances, when fatal coincidences become too frequent."

But it is not alone by the chemistry of the narcotics that death ensues, though we would fain attribute all such deaths to some mysterious action on nerve or cell. There are sins of omission and sins of commission on the part of the surgeon which can be held accountable for some, at least, of these unfortunate fatalities. In the preparation of the patient, for instance, it is not sufficient to tell the nurse or attending friend: "Give him nothing to eat." The surgeon must insist upon it that for *six hours at least* no solid food should pass the stomach, and that *four*—at least *three*—hours must elapse after the ingestion of fluids previous to the administration of an anesthetic. Necessary stimulation may be given by the rectum; it should never be given by the mouth.

An insufficient or careless physical examination may remain a haunting spirit should a patient with an unrecognized aortic insufficiency succumb to chloroform; and although authorities differ, my own experience would lead me to eschew ether in the face of kidney-disease. So, too, a brain-tumor and advanced pulmonary disease are warnings against ether, and arterio-sclerosis makes the administration of chloroform serious, if not actually dangerous. Similarly, nervous exhaustion from any cause acts as a contraindication to ether. Bearing these little facts in mind may save a patient or two; forgetting or neglecting them is little short of criminal.

Sins of commission are harder to condone than mere menial transgressions. What may be said of the method of administering anesthetics in our large hospitals? Would any of us be willing to trust to the surgical or medical judgment of a third-year medical student? Would we put into his hands a curet or a trephine, and bid him proceed with an operation? Would we think of consulting his opinion on a question of sustained or diminished

reflexes, or on the relative qualities of heart-action? And yet we do these very things, and more, by putting into the stripling's hands the most delicate part of a surgical procedure. With absolutely no experience he steps from the county-clerk's office into the ether-room, and, with the knowledge only that ether and chloroform abolish consciousness and sensation, proceeds to narcotize some helpless patient. It is an inexcusable as it is a harmful custom—harmful alike to patient and physician. The young doctor is injured because, if not properly instructed, he never learns properly how to administer an anesthetic. The patient's system is saturated with the narcotic until his stertorous breathing is heard far beyond the confines of the operating-room. He recovers from the operation with an ocular conjunctivitis induced by the constant pressure of the anesthetist's index-finger on his cornea; the soreness about the angles of his jaws gives him no love for the man who held them in a vice-like grip. Major accidents are all too common, and the scene is by no means strange of all hands assisting at artificial respiration, and poking hypodermics into cyanosed limbs. Here is a chance for needed reform; for it is a superficial abscess on our body medical, and a few incisive words from medical boards could establish a permanent cure. Let seniors have charge of anesthetics instead of juniors, and compel them to be thoroughly familiar with the physiologic and pathologic actions of the narcotics. The junior can make as good an instrumentarius as the senior, while the added experience of the latter will make him a much safer anesthetist. In addition, let two men preside at the upper end of the operating table, one to watch the pulse, the other to keep his eye fixed on the respiration. Make the young men who are to act as controllers of life and death read some standard work on anesthesia, such as Kappeler or Lyman, and pass a rigid examination before a committee of attending surgeons before the lives of patients are entrusted to their willing but helpless care. The ideal method would be to have a regular anesthetist attached to each hospital, whose duties should be didactic as well as practical, for it would be unjust to deprive hospital-internes of their one great opportunity to learn narcotic administration. It is of the highest importance to the community that men who give anesthetics should understand their duties fundamentally; they cannot learn them properly if the haphazard method of giving ether and chloroform in the hospitals is continued.

It sometimes happens that the abdominal surgeon finds it essential to put his patient in the position known by the name of Trendelenburg. So long as it is absolutely necessary for the successful performance of the operation it may be kept up. But it is dangerous for the patient, and the surgeon must not

forget that after all his patient's life is the highest consideration. The intestines in this position are thrown up against the diaphragm, and the movements of that muscle become much impeded. Respiration becomes shallow, and the patient cyanosed. Three cases in my own experience, operated on in the Trendelenburg position, have gone, with the help of broncho-pneumonia, to those confines where doctors are not needed, and where, if the lamented Autocrat is to be believed, there are few within call.

Of the proper, approved methods of administering ether and chloroform, and of the ordinary precautions before, during, and after an anesthetic, I hesitate to speak, for these are not within my present province, and they should be familiar to every man in the active practice of medicine. I would like to escort you through the labyrinth of detail involved, for it is an interesting and instructive journey, but my time-limit forbids.

I fear I have given a most gloomy prognosis for the poor individual who is compelled to undergo complete anesthesia. Very fortunately, however, the greater number of narcoses by ether and chloroform proceed to complete recovery of consciousness with no more serious sequel than a few hours of vomiting. It is to the relative safety of the two great narcotics, however, that I wish to direct your attention.

Were I obliged to take an anesthetic, and did I place any high value upon my life, I should unhesitatingly choose ether. Carefully administered, with a proper preparation of the patient, and with a pure drug, it is safer than chloroform, because when it does kill, it kills by respiratory paralysis. And a patient whose heart still beats vigorously has a very good hold on life. Moreover, the asphyxia comes about so gradually that only a most careless anesthetist can overlook the threatening symptoms. Cases are on record, indeed, in which ether has caused sudden death; but they are so rare, compared to similar fatalities caused by chloroform, that ether must be looked upon as the safer of the two. Whoever has been unfortunate enough to witness a death from chloroform knows how hopeless all efforts at resuscitation prove. When chloroform kills, it does its work quickly. If it be given in concentrated form the heart may stop first; somewhat diluted, circulation and respiration may be arrested together; much diluted, it is possible for the heart to continue to beat after respiration ceases. There is no gradual cessation of respiration with a slowly appearing cyanosis, as there is in ether-poisoning. Suddenly, the face becomes pale or livid, the lips white or black, the mouth stands open, the pupils are widely dilated, the radial artery is pulseless, the heart has stopped, the patient takes a few short gasps, and the ghastly picture of death is before the astonished and helpless surgeon. I have lived through three

such experiences, and they may have prejudiced me; for two of the patients died before anesthesia was established, and both had undergone previous operation. True, the after-effects of chloroform are not usually as dangerous as those of ether, but even the broncho-pneumonia of ether can be prevented if the prophylaxis is well managed by keeping the fauces clear of mucus, and insuring against the inhalation of vomited matter by proper means. Incidentally I am not a believer in the induction of pneumonia through the irritating influence of ether *per se*.

In the United States a death from chloroform is regarded as something avoidable since ether is the national anesthetic. Nor do I believe that this is solely because its narcotic use was discovered here. The American people are too practical to cast aside any good remedy or usage, particularly in a case of such vital importance. On the Continent, however, except in Lyons, France, chloroform is still in high favor, and the number of sudden deaths from its use does not seemingly alarm the surgeons. In the Vienna General Hospital, for instance, out of 2000 annual autopsies, six are regularly ascribed to chloroform, and this number includes only those cases of death by chloroform in which a previous pulmonary or cardiac lesion was not diagnosticated.

A recent private communication from Professor Kolisko, of the pathologic department of the University of Vienna, gives me the assurance that there are cases of sudden *exitus* during chloroform-inhalation which rest upon a condition the previous diagnosis of which can only partially be made. Briefly summarized, a constant condition found is the *habitus lymphaticus*, characterized by a persistent thymus gland, with an increase of its lymphatic tissues, enlarged lymphatic glands, adenoid vegetations and enlarged tonsils. In cases in which these conditions, or any of them, are known, chloroform should certainly be withheld; but since we cannot diagnosticate the presence of a thymus gland, is it not well to remain faithful to ether? Again, there seems to be some fateful connection between hypoplastic bloodvessels and chloroform, for the former are very frequently found at autopsy after chloroform-narcosis. This is useful knowledge in choosing an anesthetic in those cases in which there is a marked difference in size between two corresponding arteries.

Like a comforting courier from the battlefield the news came to us from Germany last winter that even chloroform-anesthesia can be robbed of its dangers. Rosenberg, of Berlin, called attention to the fact that by spraying the nose with a 10 per cent. solution of cocaine, the disagreeable effects of chloroform, both before and after, could be abolished, and the narcosis rendered safe thereby. I refrain from entering into a physiologic discussion of the use of cocaine in this instance, and will refer you to

Rosenberg's original paper. Suffice it to say that I have tried this method in eight cases (3 of ether, 5 of chloroform), and have been delighted with the ease and rapidity of abolishing consciousness, the absence of coughing and gagging, the agreeable recovery, and the very casual after-results. One of the cases was in a patient exhausted from purulent peritonitis, and the attending surgeon hesitated to open the abdominal cavity. Under the chloroform and cocain-spray it was safely done, and a large quantity of pus was evacuated. The anesthesia lasted twenty-five minutes, with no bad effect upon the patient. The dose of cocain received is almost a minimal dose, and one need, therefore, not to fear personal idiosyncrasy for the drug; and, indeed, it would be far better to experience a temporary annoyance from the use of cocain than to have a patient in that precarious condition in which his slender hold on life depends upon a hypodermic needle and a rectal tube.

Although the printed news of this innovation came from Berlin, I am happy to say that the discoverer of it was Dr. Felix Cohn, one of our members, who used the cocain-spray in his chloroform-operation for submucous resection of the septum as early as 1891, and, though his use of the drug was for hemostatic purposes, he noticed the gentleness of the narcosis.

I wish finally to call attention to a few procedures in cases of suspended respiration and threatened shock. In rhythmic traction of the tongue, as recommended by Laborde, we have a measure of decided value. Personally I know of two cases in which, by its use, the respiratory function was restored after apparent cessation, in one permanently, in one temporarily. It is certainly worthy of extended trial.

The intravenous or intraarterial infusion of a normal saline solution followed by thorough dosage with strychnin has many advocates, and among them myself. It has been said that when a patient quietly submits to the necessary maneuvers, this is a useless measure. But three out of a score or more of cases which I have infused have gone on to recovery, and if we can always save 14 per cent. of apparently hopeless cases we should not abandon our efforts. Finally, let me urge that so long as there is a perceptible heart-beat, let no effort be stopped which may renew the life departing in narcosis from ether or chloroform.

Briefly recapitulated, I would lay stress upon:

1. Careful administration of any narcotic, with minute attention to detail.
2. A reform in the giving of ether and chloroform in hospitals.
3. The avoidance of ether in cases of nervous exhaustion due to brain-tumor, advanced carcinoma, pulmonary or renal disease, or acute affections, such as intestinal obstruction.

4. The avoidance of chloroform in cardiac and arterial disease, when the *habitus lymphaticus* exists, when there are enlarged glands or tonsils, or adenoid vegetations.

5. Ether is safer than chloroform for general use. Ether kills slowly by respiratory paresis; chloroform kills quickly, usually by syncope.

6. The A. C. E. mixture and ethyl bromid are not to be relied on.

7. The spraying of a 10 per cent. solution of cocain into the nose before the administration of ether or chloroform.

8. Unremitting efforts at resuscitation in cases of respiratory cessation. In cardiac syncope little is to be hoped for.

I believe that attention to the details dwelt upon in this paper—though they could be vastly extended—would largely rob general anesthesia of its fears and of its horrors, and that care and caution bestowed upon this part of surgical and obstetric relief will aid in giving this greatest of blessings the unsullied name it deserves.

109 WEST 82D ST.

THE URINE IN NEPHRITIS.¹

BY JOHN A. LICHTY, M.PH., M.D.,
OF CLIFTON SPRINGS, N. Y.

WHILE the signs and symptoms of nephritis are many and rather definite, yet the true condition of the kidney can only be definitely learned from the condition of the urine. It is not my purpose to enter into an exhaustive description of the urine in nephritis, but simply to emphasize some very necessary points frequently overlooked in the hurried examinations usually made by the busy physician. New books on analysis of the urine are at present appearing every week, and it would seem almost impossible to offer anything new upon such an exhausted subject; yet these are often more theoretic than practical, and fail us at the very points upon which we most need help. Hence it will not, I hope, be considered an imposition upon my part to offer a few remarks upon the urine and its examination in this very important disease. The causes of albuminuria, aside from actual nephritis, are numerous. Physiologists mention some ten or twelve; yet on looking them over carefully, it will be found that the underlying cause is always some irritant that has disturbed the kidney itself or some other part of the urinary tract. The so-called "physiologic albuminuria" must be looked upon with suspicion. Normal urine should give no reaction with the usual tests for albumin. When the usual tests reveal albumin, and it is proved beyond a doubt by the absence of pus that the albumin is not from an

¹ Read before Ontario County Medical Association, October 8, 1895.

inflammation somewhere in the urinary tract, it is a physician's duty to be diligent in searching for the signs and symptoms of nephritis before he dares to assign such anomalous excretion to normal, physiological function.

In examining the urine, aside from the more common points to be observed, I wish to lay emphasis upon four facts:

1. A continued low specific gravity must be looked upon with grave suspicion, until it can be proved beyond a doubt that the kidneys are normal.

2. In nephritis, especially of the chronic interstitial type, it may happen that at times during the greater part of the disease the urine may contain no albumin that can be detected.

3. Casts may be present in the urine when it is impossible to detect any albumin by the usual tests.

4. Casts are very easily destroyed in the urine either by bacteria or during the process of fermentation, and unless the examination is made within an hour or two after urine has been passed, the failure to find casts does not prove the non-existence of nephritis.

As to the first proposition: The low specific gravity; the normal specific gravity, as is well known, is from 1015 to 1025. When it is lower than 1015, and the quantity is great, it will of course be necessary to consider the possibility of the existence of diabetes insipidus. Concerning this disease very little seems to be known. Its pathology is obscure and its occurrence rare. A diligent search for casts must be made to differentiate between diabetes insipidus and chronic interstitial nephritis in a late stage. In the *University Medical Magazine*, June, 1893, Dr. H. C. Wood, in a lecture upon chronic contracted kidney, reports a case in which the continued low specific gravity was the only point at all suspicious. No albumin was detected, and casts were found only after repeated examinations, but they were positive in their nature. I have since had several cases similar to this one mentioned by Dr. Wood.

CASE I.—Mrs. C. H. S., aged 36, after two attacks of diphtheria, noticed swelling of the feet and shortness of breath. The heart was found normal, the specific gravity of the urine 1010. There was no albumin and no casts at the first examination. The amount of urine in 24 hours was 70 ounces. Later, by means of the centrifuge, I threw down the sediment of a fresh specimen, and found a few hyaline and granular casts. This was verified several times later, and the patient was placed upon a line of treatment that relieved her of the edema of the feet and the dyspnea.

As to the second proposition—that nephritis may exist without casts or albumin being present during part of the disease—Dickinson, in his treatise on

albuminuria, mentions this fact. Various explanations are given. The one most plausible, and which I think I have often seen confirmed on the postmortem table, is that frequently only a part of the kidneys is involved, and, this part being almost entirely effaced functionally, the normal part of the kidney carries on the eliminative process. When, however, any severe strain is thrown upon the kidney—as after a heavy meal of albuminous food, after severe exercise, or after a cold—the old, wornout part of the kidney tries to resume its function, but now performs it imperfectly, and casts and albumin are precipitated.

CASE II.—Mr. S. W., aged 55, a druggist, was first seen July 27, 1893, at which time he gave a history of having had edema of the legs ten years before, and having been "cured" of "Bright's disease." He had, however, not been well since. There were symptoms of gastric dyspepsia; the skin was dry and scaly, the pulse rapid, sometimes intermittent; the aortic second sound was accentuated, and the arteries thick. The specific gravity of the urine was 1015; it was pale, but no albumin was present; 56 ounces were passed in 24 hours. Repeated examinations gave the same result; the specific gravity was always low. On July 17, 1894, the patient was seen again, and his physical condition was about the same as the year before. The specific gravity of the urine was 1010; it was acid, pale, with abundant albumin, and many hyaline casts. Just one week previous to this examination the same patient's urine was reported by a physician in whom I have great confidence to contain neither albumin nor casts. On August 24, 1894, the patient died of uremia. No autopsy was held. It is evident in this case that the "Bright's disease" of ten years previous had not been cured, but that the albumin had merely disappeared from the urine, and reappeared just five weeks before death. How often it may have appeared and disappeared during those ten years no one can tell.

The third proposition, that casts may be found when no albumin can be detected, may seem paradoxical from the fact that casts are formed of albuminous material. The test for albumin most commonly used is the heat and nitric-acid test; though Heller's, or the contact-test, is the most delicate practical one. Its delicacy reveals the presence of 0.00025 per cent. of albumin; but in the later stage of interstitial nephritis, when there is usually marked polyuria, a number of casts may be found, and yet not sufficient albumin be present to give an appreciable reaction with the usual test. I have found as many as from three to six hyaline casts under one cover-slip in a urine giving no reaction for albumin.

CASE III.—The patient was Mr. C. M., aged 45, single, who four weeks before being seen by me began to notice swelling of the legs and dyspnea.

When first seen his temperature was 95.2° ; he was pulseless at the wrist, the respirations were 22, and he had general anasarca. A mitral regurgitant murmur was present. The specific gravity of the urine was 1030; it was acid, and contained no albumin and no sugar, but a number of narrow hyaline casts. Subsequent examinations revealed no albumin. Nine days later the patient died of uremia, and at the autopsy the kidneys were found to be small, contracted, and granular.

Within the past four months I have seen seven cases whose urine contained casts at various times, but never gave a reaction for albumin.

And now as to the necessity of examining urine soon after it has been passed. After urine remains standing for a time, certain microorganisms, such as the bacterium ureæ and micrococcus ureæ, develop within it. These decompose the urea, and ammonium carbonate is set free, which, with the microorganisms named, will disintegrate tube-casts. The usual way of examining urine is to pour it into a conical glass as soon as the specimen is received, and then wait from six to twelve hours for a sediment. But by allowing it to stand so long the casts may be decomposed, especially if the laboratory is warm. To obviate this difficulty I have made use of the Metzger centrifuge, a new instrument for the precipitation of the sediment of urine and sputum, and for the volumetric analysis of red and white blood-corpuscles. With this one can throw down a sediment from a specimen of fresh urine within a few minutes after it has been received, and thus examine the sediment under the microscope at once. It is practically impossible for any casts to escape detection if this method is used.

I cannot leave this subject without making reference to the necessity of an early diagnosis of nephritis. Very rarely is the disease initiated with an acute attack, but, on the other hand, it frequently begins insidiously, and only after the irreparable mischief has been done are the symptoms sufficiently urgent to lead the patient to seek medical advice. Since the treatment of nephritis, so far as restoring the organ to its former healthful condition is concerned, is so decidedly unsuccessful, our greatest progress in this line must be in the way of prophylaxis. This involves the early recognition of any condition of the urine that may tend to produce irritation of the kidneys, or that may show that such irritation has already taken place. It would, therefore, seem advisable for the family-physician to urge upon the community from which his patients come the necessity of having the urine examined at intervals—much as dentists urge their patients to have their teeth examined—and especially to have it examined during and after any severe illness. Such a course would, no doubt, save many people from death due to nephritis.

CLINICAL LECTURE.

FOUR CASES OF MIXED OR IRREGULAR FORMS OF MULTIPLE NEURITIS IN WHICH PARAPLEGIA WAS THE MOST PROMINENT SYMPTOM IN THREE, AND A CONDITION SIMULATING HEMIPLEGIA IN THE FOURTH.

BY J. T. ESKRIDGE, M.D.,

OF DENVER, COL.;

NEUROLOGIST TO THE ARAPAHOE COUNTY AND ST. LUKE'S HOSPITALS.

LECTURE II.

(Concluded from page 487.)

WE shall resume the consideration of the subject presented by the four patients whose cases we were studying at our last Saturday's clinic. You may remember that we concluded that all the patients were suffering from multiple neuritis of an irregular or mixed type. I had arranged to have a typical chronic case of multiple neuritis before you to-day in a man upon whose case I lectured to you last year. The lecture was published in THE MEDICAL NEWS of December 22, 1894. The patient has been staying on the County Farm for a few months, but he has been attracted by the new messiah, Schlatter, and cannot be found to-day. Although the case is chronic, nevertheless the symptoms and much of the history are typical of the ordinary form of multiple neuritis. They are as follows: "D. F., fifty years of age, colored, single, a male laborer, was born in Kentucky, but has been living in Colorado since 1872. As a child he was well and strong, and thinks he did not suffer from any of the diseases incident to early life. When two years old he had an attack of smallpox, and was ill about four months. At his thirtieth year he contracted a chancre. He has never indulged in alcohol to excess. During the last twelve years he has worked in damp places, and frequently contracted colds. Ten years ago the glands of his neck suppurated, and about that time he experienced numb and tingling sensations in the feet and legs below the knees. These sensations would pass away on exercising, but, when at rest, his legs would become stiff and painful. After suffering from these symptoms, which increased for some weeks, he had to quit work for a week; he was then able to resume work, although for some months he was not entirely free from uncomfortable sensations in the legs and feet. Subsequently to this trouble he remained in good health until December, 1893, when, after working in a damp and cold place, he first felt numb and tingling sensations in his toes and in the anterior portion of the soles of the feet. In a few days these sensations had spread all over the feet, and extended up the legs nearly to the knees. About this time his ankles seemed weak, so that he could not stand without some support. As he expressed it, he "rocked on his feet." Within two weeks from the time the numb and tingling sensations were first experienced in the feet he found his legs were paralyzed from the knees downward. About the time the legs were first paralyzed he felt a burning sensation in his hands, especially in the palms, a numbness in the fingers, and a week or ten days later his arms were paralyzed from the elbows downward.

A few weeks after the paralysis became manifest he was troubled less from burning and numb sensations. From December, 1893, to March, 1894, he was treated for rheumatism. About the latter date a disagreeable tingling sensation, which later assumed a distressing burning character, appeared in the feet, and was worse at night and during cloudy and inclement weather. Similar sensory disturbances soon afterward manifested themselves in the hands, but to a less intense degree. He was admitted into the nervous wards of the Arapahoe County Hospital, August 11, 1894.

"*Examination.* He lies in bed with all the muscles below the knees completely paralyzed. Foot-drop is well marked, with extreme plantar contraction, and toes flexed, the great toe being flexed to the greatest possible degree. By using considerable force I am able to dorsally flex the feet at right angles with the legs. The legs lie straight at the knees, and he can flex and extend the legs at these joints, but the muscular power is slight. Flexion and extension at the hips are fairly good, but the muscles that make these movements are rather weak. Moving the legs and thigh at the knees and hips causes some pain, or a drawing sensation of the calf and posterior thigh-muscles. Extreme wasting has taken place in all the muscles below the knees, and to some extent in the thigh-muscles. The greatest amount of muscular atrophy is found in the interossei of the feet and in the anterior tibial and peroneal groups. The trunk-muscles are nearly normal. Wrist-drop is present, with flexor contraction of the muscles of the hands and wrists; both hands ordinarily lie in the wrist-drop position, yet with considerable effort he is able to extend the hands at the wrists on a line with the forearms, but he cannot extend them beyond this point. Marked atrophy is present in the muscles of the hands, most pronounced in the interossei and in those forming the thenar eminences. The muscles of the forearms are wasted, but to a much less degree than the muscles of the legs below the knees. The muscles of the upper arms are fairly strong, and present but slight wasting; the muscles of the shoulders appear normal; none of the muscles below the knees or elbows responds to the strongest faradic current from a large-sized Flemming battery. All these muscles show reaction of degeneration. The muscles of the neck, face, and larynx are not involved.

"*Sensory Phenomena.* Tactile sense when tested by the contact of a feather is lost on the feet and legs from a point about midway between the ankle-joints and the knee-joints downward; the sense of touch is present down to a point about six inches above the ankle-joints when the feather is in gentle motion; in the right hand and arm the feather in contact is not felt from a point four inches above the wrist-joint downward, and in the left from a point about four inches above the wrist-joint downward, while a feather in motion can be felt over the greater portion of the backs of the hands and wrists, but is not perceived on the dorsal surface of the fingers, the palmar surfaces of the fingers and hands, and the anterior surfaces of the wrists, and the anterior surfaces of the arms from a point about two inches above the wrist-joint downward. Tactile sense is present and nearly normal over all other portions of the body. Pain-sense is present throughout the body, but it is not normally acute in the areas of tactile anesthesia until

the skin is pierced. Temperature-sense is lost all over the feet, delayed, uncertain, and lessened over the ankles, and in areas of tactile anesthesia of the legs, and much perverted over the hands, but not lost as in the feet. Localization-sense is greatly disturbed, especially over the feet, as a sensation produced on the leg is referred to the feet, and sometimes to the foot of the opposite side. Pressure-sense is disturbed more in the hands than in the feet. Joint-sense and posture-sense are present and about normal. Muscular sense is absent.

"The knee-jerks, the plantar, cremaster and forearm reflexes are absent; abdominal and iritic reflexes are present. Taste, smell, hearing, and vision are about normal. The internal and external ocular muscles and the ophthalmoscopic examination show no abnormalities."

Now let us consider the characteristic symptoms of multiple neuritis; they are bilateral, usually symmetric, generally affect only the distal portions of the extremities, with an involvement of nearly all, if not all, of the nerves of the diseased parts.

Multiple neuritis is due to a poison that affects the nervous system through the circulation, and is in consequence always bilateral in typical cases. In uncomplicated cases the symptoms are symmetric, but various modifying conditions may disturb the symmetry. Alcoholism is a recognized cause of multiple neuritis, yet traumatism, rheumatism, or other local determining influences may destroy the symmetry of the disease by affecting certain nerves more than others. The influence of gout or rheumatism upon the system may cause the development of poisons which may give rise to multiple neuritis, but under these circumstances the well-known tendency of these diseases to affect one portion of the body more than another may destroy the symmetry of the symptoms. While in the vast majority of cases only the distal portions of the extremities are affected, yet the poison may be so active as to involve to a greater or less extent all the nerves of the body, those of the trunk as well as those of the limbs; but even in this case, the distal portions of the legs and arms suffer more than the other portions of the body.

It is probable that the nerves of the distal portions of the extremities are more affected than those of the proximal because the latter are better nourished than the former. It may not be correct to say that the disease is limited to the distal portions of the limbs, as a systemic poison expending itself on the nerves undoubtedly affects the nerves throughout their entire length, but the morbid process is only sufficiently intense to give rise to obtrusive symptoms in the parts in which the metabolic changes are the least active. Assuming this proposition to be correct, the changes in the parts most distant from the heart may be destructive, while those in the nerves nearest the body may be irritative. This would enable us to explain the variability of the deep reflexes, especially the knee-jerks, for we usually find them absent, but in some cases they are simply lessened, while in a few they are exaggerated. In rare cases there is weakness of the sphincters of the bladder and bowels, but in these the spinal cord or the brain is probably affected. While all the nerves of the affected parts are involved, some suffer more than others, such as the musculo-spiral and anterior tibial, nerves that supply the muscles that dor-

sally flex the feet and extend the hands at the wrists; hence foot-drop and wrist-drop are commonly observed in typical cases of multiple neuritis.

The symptoms of the disease, for convenience of study, may be grouped under six headings: motor, sensory, trophic, ataxic, reflex, and electric changes. The motor symptoms are usually well marked, and consist in paresis or paralysis of the muscles below the knees and below the elbows, the dorsal flexors of the feet and extensors of the wrist and hand being most affected, with resulting wrist-drop and foot-drop. In some cases the muscles of the thighs and upper arms are decidedly weak, but rarely paralyzed, the extensors of these parts being more affected than the flexors.

The most marked sensory change is tactile anesthesia on the plantar and dorsal surfaces of the feet, often in the parts around the ankles, and sometimes on the legs to a point about midway between the ankles and knees, and between the wrists and elbows. In a few cases the anesthesia extends up as high as the knees and elbows, or even above these joints. The other general sensory phenomena in the areas of tactile anesthesia are usually perverted, the extent of the perversion varying in degree with the profoundness of the tactile anesthesia. In some cases pain-sense is increased, although tactile anesthesia seems to be complete. The nerves of the most affected parts are often sensitive to pressure. The plantar surfaces of the feet and the palms of the hands are not infrequently the seat of almost constant, severe, and distressing pain. In some cases the pain in these parts is only complained of at night, except on sudden changes of weather, when it may be very annoying both day and night. Tenderness of the muscles is sometimes greater than the tenderness in the nerves, and may persist long into the period of convalescence.

The trophic changes are observed in the muscles, joints, skin, nails, and hair. Microscopically the nerves always show changes of a trophic character. The extent of the trophic alterations depends upon the severity of the inflammation in the nerves. Trophic changes are most obvious in the muscles, which often waste to an extreme degree. Sometimes the affected parts become edematous and the joints are the seat of effusion.

Ataxia is often so pronounced in the legs of persons suffering from multiple neuritis, especially if the person is able to walk, as to suggest sclerosis of the posterior columns of the spinal cord, and not infrequently from this symptom alone the careless observer has mistaken a case of multiple neuritis for one of locomotor ataxia. The fingers and hands are often decidedly ataxic.

The knee-jerks are abolished in the vast majority of instances, but in exceptional cases they are lessened or exaggerated. I am not convinced that an irritative lesion of the nerves supplying the extensors of the thighs will explain the enormous increase of knee-jerks sometimes witnessed in these cases. It is probable that the knee-jerks may be increased by a heightened irritability of the muscles due to inflammation in the connective tissue of the muscles. The only superficial reflexes involved in the vast majority of cases are the plantar. They may be abolished, normal, or increased.

The electric changes in multiple neuritis are usually quite pronounced, and consist of lessened or abolished faradic response in muscles and nerves, failure of the nerve to respond to galvanism; at first increased muscu-

lar irritability to the galvanic current, with changes of the normal formula, so that the muscles will respond equally well or better to the positive as to the negative pole. Later the muscular irritability may lessen to the galvanic current or fail to respond to the negative pole except to a current so strong as to be unbearable to the patient.

In some cases of multiple neuritis the motor symptoms are well marked, while sensation is nearly normal and ataxia is scarcely appreciable; in others the sensory symptoms are pronounced and motor power well preserved; and in a third group ataxia is very decided, while sensation and motion seem to be but little impaired; so that we may have motor, sensory, or ataxic forms of multiple neuritis. I have never seen a case in which on careful examination one of these groups of symptoms was well pronounced and both of the others were entirely absent.

While in the vast majority of cases of multiple neuritis the arms and legs are affected, occasionally the poison seems to expend its influence on the nerves of the legs, the arms escaping, if not entirely, to such an extent that the most careful examination fails to reveal any objective symptoms. I am inclined to believe that multiple neuritis of the paraplegic type is much more common in alcoholic subjects than the recorded cases would lead us to infer. I have observed six cases of multiple neuritis of the paraplegic type; four of them have followed typhoid fever. I do not remember having seen multiple neuritis, unless we regard lead-paralysis as being of this nature, limited to the nerves of the hands and arms.

We will now return to the consideration of the cases that we were engaged in studying at the close of our last clinic. You may remember that by a process of diagnosis by exclusion we came to the conclusion that no nervous lesion, except multiple neuritis, would account for the symptoms. Let us review the cases separately, and see if a lesion of the nerves will account for the various symptoms.

The first case was in a young Swede who during convalescence from a prolonged attack of pneumonia, began to suffer from pains and tenderness in the legs below the knees. On examination all the symptoms, except the increase of the knee-jerks and the disease being limited to the legs, were typical of multiple neuritis. Further, all other lesions of the nervous system that would account for many, if not all, the symptoms could be excluded. Multiple neuritis following pneumonia usually occurs during the early part of the convalescence. In a case reported by Dr. Leech, in the *Medical Chronicle*, motor symptoms were well marked in the legs, but absent in the arms; sensory changes, although more pronounced in the legs, were quite distinct in the hands and forearms. In this case the knee-jerks were absent. The knee-jerks are occasionally present and exaggerated, especially in the alcoholic variety. In the *British Medical Journal* of February 18, 1893, Arthur Maude reports a case entitled "Exaggeration of the Tendon-Reflexes in Peripheral Neuritis, following Prolonged Alcoholic Indulgence," and in the same journal for February 25, 1893, D. B. Leech records two somewhat similar cases. I have seen two cases of alcoholic neuritis in which the knee-jerks were increased and in which the sensory and motor symptoms were entirely limited to the legs and feet. Of 90 cases of alcoholic neuritis analyzed in Ross

and Bury's recent work on *Multiple Neuritis*, in 5 the knee-jerks were exaggerated or lively, in 1 they were normal, and in another they were exaggerated at first, and became lost with the progress of the disease. We must not forget that the knee-jerks are probably exaggerated in the very early stage of multiple neuritis. If the knee-jerks become much increased after an attack of diphtheria, it indicates that neuritis will follow.

In the second case of the series that we were engaged in studying last Saturday the nerve-lesion followed a severe and prolonged attack of typhoid fever. The symptoms of this case were paraplegic in character, and one knee-jerk was slight, the other being absent, as is usually the case in this disease. In most of the cases of neuritis that I have observed following typhoid fever the trouble has been confined to a single nerve of a limb or to certain nerves paralyzing groups of muscles and giving rise to irregular areas of anesthesia. The radial nerves in the arms and the musculocutaneous in the legs and sometimes the anterior tibial are those that suffer most frequently in typhoid fever. Individual nerve-inflammation following typhoid is so common as to lead one to suspect that injury by pressure may be a determining cause of the nerve-affection. There are, however, a number of cases of multiple neuritis developed during the convalescent stage of typhoid fever. They are rarely typical cases, but most of them, judging from my experience, are irregular in type, and the nerves of the legs suffer more than those of the arms. When we remember that multiple neuritis of typhoid fever is rarely symmetric it is easy to understand that the knee-jerks may be irregular. It is probable that the typhoid poison has much to do with the development, or the tendency to development, of multiple neuritis, but it is also probable that local causes, such as pressure or slight injuries to individual nerves have a greater influence in affecting some nerves than others.

Our third case was in a man of 87 years, who had suffered from no special disease from whose poison we could expect neuritis to arise; neither had he been addicted to alcohol. With the exception of the trouble being limited to the legs, his symptoms were almost typical of the sensory form of multiple neuritis, and there is no other nervous lesion by which we can account for the anesthesia. The poor nutrition at the time of his admission and the extreme degree of atheroma of all exposed arteries of the body were the only apparent causes of his trouble. After he had been in the hospital for some time his nutrition greatly improved, and is to-day quite good, but the nervous trouble has continued to increase. It is most likely that we have a senile or thrombotic multiple neuritis. A few years ago I had the opportunity of observing, in this hospital, for nearly two years, a typical case of thrombotic multiple neuritis. The patient suffered greatly from subjective sensory disturbance for a considerable time before areas of anesthesia developed, and motor weakness, and finally paralysis, with great wasting of the muscles, did not become manifest until about six months previous to death. Before the fatal end the feet became gangrenous (dry gangrene), and pressure-sores developed over the various portions of the legs and buttocks. A few weeks before death myelitis supervened, with contractures of the legs and involvement of the sphincters of the bladder and bowels. If I remember the history

of the case correctly the arms were only slightly affected, and this did not occur until very late in the disease. The microscopic examination showed degeneration of the nerves of the legs, and great thickening of the walls of the arteries, even of the nutrient arteries of the nerves. In no place could a complete obliteration of the caliber of the nutrient arteries be demonstrated, although this condition probably existed. Gowers, in the last edition of his *Manual of Diseases of the Nervous System* calls attention to senile or thrombotic multiple neuritis. It is probable that this condition is much more common than has heretofore been supposed, and many of the cases of subjective sensory disturbance found in persons of advanced life, especially with degeneration of the arteries, may be due to a low form of multiple neuritis of thrombotic origin.

Of the 4 cases 1 was chronic alcoholic multiple neuritis, and was nearly typical in character until the receipt of the injury which gave rise to motor symptoms largely of a hemiplegic type. The case as seen by me, might easily have been mistaken, in the absence of a history, for one of hemiplegia due to a cerebral lesion. The only peculiarity that this case manifested as compared with the ordinary type of multiple neuritis, before the receipt of the injury, was the marked weakness in the muscles of the right hand out of proportion to the left. I did not see the man at this time, and cannot say whether this symptom was simply subjective, or whether it would have been manifest on testing the strength of the muscles of both hands. As the man had to do considerable writing it is probable that the muscles of the right hand and arm in their weakened condition soon tired, simulating a condition of pseudo-writer's cramp, for which I understand he was treated for a time. Had the muscles of the left hand been subjected to the same strain as those of the right it is probable that this hand would have been complained of also. After the injury a careful examination showed bilateral symptoms, especially of a sensory character. These were more marked in the legs than in the arms. While on one side of the body the strength was about half of normal, the leg and arm of the other side were almost completely paralyzed. This case serves to illustrate the condition to which I have called your attention, that we may have a systemic poison, such as alcohol, causing a symmetric multiple neuritis; but the intervention of a determining local cause may result in the affection of certain nerves to a greater extent than others, and thus destroy the symmetry of the symptoms. Multiple neuritis due to a systemic poison is usually a parenchymatous inflammation of the nerves, but when a local cause determines the inflammation the interstitial tissue may be affected, and the parenchyma becomes involved later. After a serious injury the neuritis is likely to be of a diffuse character, affecting both the parenchyma and the connective tissue of the nerves.

The course and duration of the disease vary according to whether the inflammation is acute, subacute, or chronic. In the acute variety the inflammation increases from four to six weeks, remains stationary from two to three weeks, when the morbid process begins to subside, convalescence extending over a period of several months. In the chronic form the duration may vary from one to several years, and in the subacute it extends over periods greater or less in length, intermediate between

the acute and the chronic varieties. The diphtheric form, as a rule, runs the shortest course, convalescence in the majority of cases being pretty well established in a short time, so that the patient is able to walk about by the end of the second or third month from the time the neuritis began to be manifest. The alcoholic form is not infrequently slow in reaching its height. I have seen patients whose disease had been developing from one to two years before it reached its acme. Those forms which follow an acute disease usually run a course of from three to twelve months. It must be remembered that the muscular strength is not regained for several months after the patient is able to return to his duties. The parts that are first affected are usually the most seriously involved and the last to resume their normal condition. The legs usually improve before the hands and arms, but in alcoholic cases, as well as in many others, the order may be reversed. The feet, and sometimes the hands, especially around the nails, remain hyperesthetic long after the spontaneous pain has subsided. Relapses, to which the patient is always liable, greatly lengthen the course of the disease.

The vast majority of cases of multiple neuritis result in recovery. In a few cases the trunk-muscles, including the intercostals, become affected, and, if the diaphragm becomes paralyzed, death takes place from failure of respiration. These are acute and rapid cases which not infrequently end in death from six to ten days or two weeks. Cardiac failure in alcoholic or diphtheric cases sometimes causes sudden death, and, in a few, the patient is worn out by pain. In the thrombotic form gangrene takes place, bed-sores develop, bronchitis finally supervenes, and death is the result. It is probable that in those cases in which bed-sores develop the spinal cord is affected. In alcoholic cases, cardiac, renal, and hepatic complications may lend gravity to the prognosis. Mental failure is a common complication of alcoholic multiple neuritis, but it usually passes away during convalescence. Sometimes there is a simple failure of memory for recent events, but in the typical cases of the alcoholic form the patient becomes delusional and conceives the idea that he goes out each day and takes long walks, although he may be so completely paralyzed that he is unable to stand or even flex or extend the feet.

The treatment in the early stages consists of rest in bed, protecting the extremities from changes in temperature by means of flannels wrung out of hot water, warm daily baths, if they do not inconvenience the patient too much, keeping the bowels open, and giving a febrifuge when there is a rise of temperature. In all cases protecting the parts from sudden changes in temperature is important. So soon as the acute stage has subsided, massage and electricity, and the internal administration of strychnin, arsenic, quinin, and iron are indicated. The nutrition should be maintained throughout the course of the disease by means of good nutritious food, of which animal food should form a large proportion during convalescence; and codliver-oil may be added to the list of nutrients. Relapses may often be prevented by protecting the affected parts from sudden changes in the temperature by means of flannels worn next the skin. In the alcoholic variety especially, total abstinence from alcohol in every form should be insisted upon. Massage should not be resorted to while

the muscles and nerves are sensitive, but gentle rubbing of the limbs from the distal portions toward the body is often grateful to the patient early in the disease. It is doubtful how much the galvanic current hastens the resolution of the morbid process in the nerves and muscles, but the nutrition of the latter may be partially maintained, and the extreme atrophy prevented, by causing gentle contractions of the paralyzed muscles until the patient regains voluntary control over them. When the muscles readily respond to the faradic current this may be used, but the current should be no stronger than is necessary to effect gentle contraction of the most affected muscles. In the majority of cases the faradic current will not induce muscular contraction of the extensors of the wrist, and of the anterior tibial and peroneal groups. If all the muscles will not respond to a slowly interrupted faradic current of moderate strength, the interrupted galvanic must be used, taking care not to exhaust the muscles by prolonging the seances to too great length, or by having too vigorous muscular contraction. From three to five minutes is long enough at first for each of the largest groups of muscles. Ordinarily the slight muscular contraction is less likely to do harm, and is capable of doing more good than vigorous movements. Electricity may be applied for this purpose daily or every alternate day. Massage may be employed daily, or in many cases, twice daily, if it is not done too vigorously. By timely and proper attention, troublesome contractures of the flexor muscles of the legs and arms, resulting in the deformity of the feet and hands, may be prevented. This may be done by keeping the feet at right angles to the legs by means of sand-bags placed at the soles of the feet, and by occasionally placing the forearms and hands on padded splints. The muscles that have a tendency to become contracted should be gently stretched each day.

CLINICAL MEMORANDA.

THREE OPERATIONS FOR THE RELIEF OF TRAUMATIC EPILEPSY, TWO OF WHICH WERE COMPLICATED WITH INSANITY.

By JOHN D. DAVIS, A.B., M.D.,
OF ALLEGHENY CITY, PA.

THE subject of traumatic diseases of the head and brain is particularly important, and the study of both the immediate and remote results of injuries to this important organ is as interesting as it is inexhaustible. There can be no subject of greater interest to surgical science than that which treats of the restoration of a dead mind or the reestablishment of the functions of a dead part. The alterations in the brain-substance produced by injury may involve the intellectual, the sensory, or the motor areas, or impair all of them, the most frequent sequelæ being insanity, hyperesthesia, convulsions, or paralysis. The injury may not be sufficiently severe to interfere with the functions of the brain, but may only apply to the scalp or skull, and yet very distressing reflex influences may be the result at a more or less remote period.

It is the intention of this paper simply to call attention to the results of operative procedure in three cases, and

if possible to point out the great relief that might be given to many who are now only objects of pity. With asepsis and antiseptics understood and practised as it is at the present time, the opening of the skull-cavity is attended with but little danger to life, and with the nerve-centers and brain-functions localized as they are, we should be able to do much good by judicious surgical interference in carefully selected cases. There are numberless cases of insanity, epilepsy, and other distressing nervous ailments due to traumatism that could be relieved and the subjects restored to usefulness who are now a burden to friends or dependent on charity. As I said before, in many instances the cause of the reflex phenomena is resident in the scalp or skull and no harm can result from a skilful attempt to remove the source of irritation. In many instances the moral effect of the operation would be beneficial.

CASE I. *Epileptiform convulsions.*—On November 1, 1892, I was consulted by Frederick K., aged 30 years, for epilepsy. His physique was indicative of a robust and healthy constitution. He was a farmer by occupation, born of healthy parents, both living, with no cases of insanity, idiocy, epilepsy, carcinoma, or tuberculosis known in his family or among his relatives. Ten years ago, while erecting a frame building, he fell a distance of 15 feet, striking the back of his head on one of the timbers. The scalp was not lacerated, nor did he consider himself much hurt; yet within an hour he was attacked with a severe convulsion lasting several minutes. From that date he had on an average two convulsions a day. Occasionally he would have intervals of relief for several days, and again have a number of convulsions in a few hours. He was seldom free from headache in the left occipital region and had continuous tinnitus aurium on that side. His intellectual and facial expression was that of an epileptic. He had been under the care of excellent physicians who had exhausted the *Pharmacopeia* in trying to give the man relief. I suggested opening the skull at the seat of injury and exploring for the cause of the trouble, to which suggestion he readily acquiesced. He was soon afterward placed in the Allegheny General Hospital, where all antiseptic precautions were observed, and on November 14, assisted by the late Dr. Joe Dickson and Dr. F. F. Myers, I removed a $1\frac{1}{4}$ in. button from the left occipital region midway between the external auditory meatus and the external occipital protuberance, cutting the upper margin of the groove of the lateral sinus. The membranes when exposed presented a healthy appearance, as did also the brain-tissue. There was no indication of a cyst or that the brain-substance had been in any way injured. With a dural separator I explored the inner surface of the skull and detected what might be termed an enostosis situated scarcely $\frac{3}{8}$ in. from the trephine-opening in the direction of the parietal protuberance. It was small, but readily appreciable. With the rongeur forceps the bone was cut away in that direction. A very perceptible change in the density of the bone was noticed as we approached the enostosis, and when it was reached we found not only the enostosis soft and cheesy in consistency, but that the softening and degeneration had extended to the skull-bone itself. It cut more like dried cheese than bony tissue. After removing all this softened bone (about the size of a nickel) the wound was dressed antiseptically and the patient put to bed.

Convalescence was rapid and devoid of any unfavorable symptom. The temperature never reached 100° , nor the pulse-rate over 80 per minute. The result of the operation was most gratifying. The headache was relieved almost instantly. The tinnitus aurium ceased in a few days and up to the present time, now $2\frac{1}{2}$ years after the operation, the patient has not had a convulsion. He has been engaged at manual labor all this time and has enjoyed perfect health.

CASE II. *Epileptiform convulsions complicated with insanity and paralysis.*—John H., aged 34 years, a restaurateur of Chicago, during the dedication of the World's Fair in October, 1892, received a blow with a chair on the right parietal bone. He was rendered unconscious for several hours. After regaining consciousness he suffered with paroxysmal headaches, but it was not until the following January, 1893, that his mind became so deranged that his friends found it necessary to relieve him of the care pertaining to his business. He was then taken to a sanitarium at Lake Geneva for treatment, but his malady progressed, and was augmented by attacks of epileptiform convulsions, which were of frequent occurrence and very severe. In February a gradual loss of power took place in the left arm, which progressed until paralysis of the arm, forearm, and hand was complete. Following this was a partial paralysis of the left leg and thigh, particularly marked in the anterior muscles.

In April, 1893, the man was removed to an insane-asylum, where he was confined until August 1. All this time the symptoms were growing worse. Early in August he was removed to the home of his parents in Allegheny City, Pa., and when I was called to see him, September 1, 1893, his condition was alarming. He was suffering from most excruciating headache confined to the right side of the head. The pain was so great as to elicit agonized cries, and the patient was with difficulty at times restrained from escaping to the street. His convulsions were frequent, as many as one and two occurring every hour. His appetite was destroyed and sleep was impossible, except when produced by heroic doses of morphin. His hallucination consisted principally of a fear of impending evil, loss of family, fortune, reputation, etc.

Medicaments had had a fair trial and failed; so the patient was placed in the Allegheny Hospital, and on September 5, 1893, assisted by Drs. Dickson and Myers, I removed a button $1\frac{1}{4}$ in. in diameter from the right parietal bone over the junction of the upper and middle thirds of the fissure of Rolando. By means of the rongeur forceps this opening was enlarged in an upward and downward direction. There was a very perceptible bulging of the dura mater into the opening and the membrane itself was unusually adherent to the bone. Other than this there was no indication of injury or disease of the membrane. The dura was laid open by a crucial incision. There was an immediate escape of about two drams of thin pus, apparently the contents of a degenerated cyst, although there were no remains of a cyst-wall. The pus-cavity was washed out thoroughly with a weak solution of mercuric chlorid, the wound dressed antiseptically, and the patient put to bed. The immediate result of the operation was better than we anticipated. The headache was relieved, the convulsions ceased, and the mind was restored. This condi-

tion continued and convalescence was uninterrupted until September 16, when I was suddenly called to his bedside and found that all the previous symptoms had returned. I removed the dressings, reopened the scalp-wound, which had united by first intention, and found a reaccumulation of pus. After removing all pyogenic substance and washing out the cavity most thoroughly, I introduced a double drainage-tube and dressed the head as before. A favorable condition was at once apparent; for a week the wound was washed out with a weak, lukewarm solution of mercuric chlorid by means of the double drainage-tube. A hernia cerebri was feared, but fortunately the wound closed without any such occurrence. In six weeks from the time of operation the patient was removed to his home, practically a well man, with the exception of the paralysis. Shortly after this he noticed a return of power in his left leg and arm. This improvement was slow but continuous, and now, almost two years from the date of the operation, he has perfect use of his left leg, and the power in the left arm, in which the paralysis was complete, is restored, with the exception of the deltoid muscle and extensors of the hand, these being yet slightly impaired. He is now filling a clerical position with one of the traction-roads of this city.

CASE III. *Epileptiform convulsions complicated with pronounced melancholia.*—On October 1, 1894, I was consulted by the parents of Miss Minnie E., a young lady of 22 years, who had enjoyed perfect health until the receipt of an injury sixteen months previously. While skating she fell upon the ice, striking the back of her head a violent blow, rendering her unconscious for three hours. When I saw her, her mental condition was such that her friends feared that she would destroy herself or do some violence to the other members of the family. She was very morose and irritable. Headache had been incessant for over a year and was increasing in violence. Pressure at the seat of injury increased the pain very considerably. She was having on an average two epileptiform convulsions daily; her appetite was much impaired; sleep was almost impossible; and there was marked loss of flesh. Her condition was rapidly growing worse, notwithstanding she had had the benefit of the services of the best physicians, with change of climate and surroundings.

The objective symptoms were very obscure and the treatment doubtful, but with the approval of her parents she was placed in the Allegheny General Hospital, and on October 15, 1894, with the assistance of Drs. Dickson and Myers, I trephined at the seat of injury, removing a 1½ in. button over the middle third of the superior semicircular ridge on the right side of the occipital bone. The skull seemed perceptibly thickened, and bleeding was free from the entire cut surface. This congested condition was particularly marked and the oozing of blood continued for several hours. The dura showed no indication of disease or of having suffered any injury whatever. The intracranial pressure was very great, so much so indeed that the membranes bulged up, almost filling the trephine-opening, and were so tense that the pulsations of the brain were not perceptible to touch. A crucial incision was made in the dura and the surface of the brain examined and then a careful exploration was made in different directions by means of a hypodermic needle for a suspected cyst, but nothing abnormal was

discovered. After satisfying ourselves that the marked intracranial pressure was not due to the presence of a cyst or tumor in that particular part of the brain, an attempt was made to approximate the flaps of the dura, but this was found to be impossible, as the brain-tissue bulged into the opening until it was on a level with the external surface of the skull. The wound was dressed antiseptically and a firm compress applied.

The information obtained from the operative procedure as to the source of nervous irritation was thus very small. The only cause apparently discovered was the congested condition and the seeming thickening of the skull or perhaps the abnormal intracranial pressure, and it would have been difficult at the time to have pronounced either pathologic. The young lady made a most satisfactory convalescence, the wound in the scalp uniting by first intention, the temperature never reaching 100° or the pulse-rate above 75 per minute. Our failure to discover at the time of operation any positive or distinct cause of the nervous phenomena did not lessen our gratification at the ultimate result. Three days after the operation the patient declared herself free from headache, and there has been no recurrence of it since. Her mental disturbance rapidly disappeared, and at the present time intellection is as bright and disposition as genial as before the injury. She has gained twenty pounds in weight and her general health is perfect. Up to this time, eight months after the operation, she has never had a convulsion. She is now in the training-school for nurses in the hospital in which she underwent the operation.

The result in this case may be attributed to the removal of the (apparent) causes we found, or to the moral effect produced upon the mind of the patient by the operation. But however it may be explained, the fact is patent that the consummation desired, namely, the relief and restoration of the patient to health, was accomplished. I have for the purpose of brevity omitted the technic of the operation as well as a detailed history of the convalescence.

A CASE OF HEADACHE DUE TO ADENOID GROWTHS.

BY HOWARD S. STRAIGHT, A.M., M.D.,
OF CLEVELAND, O.

In October, 1894, a boy, aged 16 years, consulted me as to a headache from which he had suffered for 3 years. He was a healthy boy and had never been seriously sick. Nothing in his general condition accounted for his headache. His eyes caused him no trouble. He said that he had some catarrh in the nose, and wished to know whether there was any possible connection between the nasal trouble and the headache. His complaint as to his nasal catarrh was in no way unusual. For three years he had suffered severely from headache. As a rule, on rising his head would ache so much that he could not eat any breakfast, and often he would vomit. The headache would continue until about the middle of the forenoon, and then would gradually subside; by noon it would disappear. About once a week he would have a headache so severe that he would have to go to bed and remain for some hours. He had tried all kinds of medicines recommended without any permanent relief.

An examination of his upper air-passages revealed adenoid growths. There was no other abnormal condition present. A removal of the adenoid growths was advised and no promise was made as to possible relief of the headaches by this operation. The growths were scraped out with a Gottstein curet after painting the soft palate and pharynx with a 20 per cent. solution of cocaine. After removal of the adenoids the headaches ceased at once, and have never returned. A recent letter of inquiry as to his present condition was answered in accord with the foregoing statement.

Adenoid growths are mentioned in the literature of the subject as a possible cause of headache. The possibility of headache being due to this condition is not considered at any great length in ordinary treatises. Fränkel has discussed the subject at greater length than ordinary, but offers no explanation of the manner in which the growths in exceptional cases produce such a result. Such cases must be rare. This is the only one that has passed under my observation. There was nothing unusual either in the quantity of growths present or in their character. The boy had had the headaches for three years only. The adenoid growths had in all probability been present much longer, and were at one time even larger than when removed. Why they should have given rise to the headaches for three years only is a question. If at the time of the first occurrence of his headaches his general health had been depressed, one could understand why the adenoid growths should have given rise to a new train of symptoms. There was, however, no such history. It is always an interesting question why a local morbid condition, present it may have been for many years and giving rise to no trouble, should all at once become the cause of marked disturbances.

THE HICKOX.

A CASE OF ENLARGED PROSTATE GLAND TREATED BY REMOVAL OF THE TESTICLES, DEATH.

BY JOHN B. ROBERTS, M.D.,
OF PHILADELPHIA.

A MAN, 86 years of age, had suffered at various times for a considerable period with attacks of retention of urine due to enlargement of the prostate gland. Catheterization for a few times usually relieved him; and subsequently he was able to empty his bladder without further treatment. It was not necessary for him to use a catheter between the attacks of retention. During September of this year he had an attack of retention for which he was repeatedly catheterized by Dr. J. C. Knipe, resident physician at the Jewish Hospital, who had the immediate charge of him. When I examined the prostate through the rectum I found that the lateral lobes were not very much enlarged; the hypertrophy was evidently in the so-called middle lobe. Catheterization was rather difficult, and attended with considerable bleeding. The patient was, however, catheterized two or three times a day, and given potassium acetate, ergot, and tonic remedies. His bladder was occasionally washed out with boric-acid solution. The difficulty of introducing the catheter led to our leaving an instrument in the bladder for several days, which gave him much relief. Finally, on October 16th, we removed both testicles, and left a soft-rubber catheter in the bladder to

drain off the urine. At the end of two or three days the patient, who had continued to grow weaker, was troubled a good deal with nausea and vomiting, and the permanent catheter was withdrawn, lest it might be the source of retention. He was then catheterized at intervals, though with some difficulty. He died five days after the operation. The wounds were in good condition, as they had been kept sealed with iodoform and collodion. The dribbling of urine over the scrotum was not allowed to contaminate the wounds, as they were frequently washed and the collodion-dressing reapplied. The patient did not die from the effects of the operation, but from the urinary condition. I seriously contemplated making a suprapubic cystotomy instead of removing the testicles, but concluded to do the latter operation, as the patient's condition was fairly good, and it was possible to introduce a catheter through the urethra. I rather regret now that suprapubic cystotomy had not been done and the removal of the testicles delayed until the man's condition had somewhat improved.

MEDICAL PROGRESS.

Successful Removal of a Foreign Body Impacted for Forty-six Days in a Bronchus.—MORGAN (*Lancet*, No. 3761, p. 769) has reported the case of a healthy girl, eight years and nine months old, in which three weeks before coming under observation, whilst sucking a plum-stone which she had previously cracked, a portion of the stone fell back, and, as was supposed, was swallowed. There was immediate complaint of pain in the neck, and a crust of bread was given for its relief. An attempt on the following day to dislodge the stone by inverting the patient was unsuccessful. Subsequently there was pain referred to the right side of the heart. Poulitices were applied and constantly renewed, with a view to relieving the pain, and the child was kept in bed for three weeks, during which time she took very little food. She was unable to sit up, but slept well except when troubled by cough, which occurred in paroxysms both by day and by night. The nutrition was fairly well preserved. The left side of the chest was flattened, chiefly over the second and fifth ribs, and the movements of this side of the chest were deficient, the interspaces being sucked in during inspiration. Vocal fremitus was greatly diminished, especially below the level of the third rib. The apex-beat was felt in the fifth interspace, half an inch external to the nipple. The whole of the left side of the chest was dull upon percussion, except over the left of the sternum, and this dullness extended over the whole of the left lung posteriorly. The right side was hyperresonant. On auscultation some breath-sounds were heard under the left clavicle, but were lost about the third interspace, and some feeble breath-sounds were audible behind in the suprascapular region, below which, however, all was dull.

After due consideration it was decided to attempt the removal of the foreign body by operation. Accordingly, nine days after the accident, an incision was made in the median line from the cricoid cartilage down almost to the inter-clavicular notch. The trachea was exposed, and a scalpel passed through between the third and fourth rings from below upward, well below the level of the isthmus. No mucus escaped, but a

small amount of blood that entered the opening was expelled. The patient was inverted, but the obstructing body was not released. A bent wire, with the looped extremity downward, was passed down the left bronchus, but without first discovering any obstacle to its further passage. A double-looped strand of silver wire was then passed, with the result that the object sought was distinctly felt. On each of several attempts mucopurulent secretion was brought away on the instrument, and a small quantity was expelled through the opening after each trial. On attempting to pass the little finger the child became distressed, the veins of the neck becoming distended and turgescient. The child was allowed to partially recover consciousness and the laryngeal reflex was then excited with a feather. The breathing became very spasmodic and violent, but without the effect of expelling the foreign body. A large oval tracheotomy-tube was tied in with tapes, and the incision drawn together above and below, but owing to some distress another tube had to be substituted. For several days there was a good deal of cough and moderate mucopurulent expectoration.

Fifteen days after the operation the child was again anesthetized and inverted; a feather was passed down the trachea, but no effect was produced upon the foreign body. A long probe, slightly bent, was then passed down the left bronchus, and a hard substance was distinctly felt at a distance of about five-and-one-half inches from the lower margin of the tracheotomy-wound. The wound was then held open by retractors, and a long pair of forceps, curved for the last inch of their length, was passed down the left bronchus, but the retractors had to be removed before the foreign body could be grasped and removed. This was found to be nearly half of an irregularly broken plum-stone, which had been impacted with its apex downward. The wound was covered with a guard wet with carbolic lotion, and closed without further complication.

Splenopexis for Wandering Spleen.—PLÜCKER (*Centralblatt für Chirurgie*, 1895, No. 40, p. 906) has reported the case of a woman, twenty-three years old, and married for five years, who had aborted twice, but had borne no living child. For three years there had been complaint of constant abdominal and pelvic pain. There was no vaginal discharge and no hemorrhage. On vaginal examination the uterus was discovered to be retroflexed and somewhat enlarged and fixed; the right ovary was normal and slightly movable, and the tube was not thickened; the left ovary could not be felt, but in its place was a fairly firm, smooth tumor, equal in size to two fists; this mass was movable and filled the true pelvis. Wandering kidney was excluded in the diagnosis. Wandering spleen was thought of, but from the physical signs and the clinical history a benignant tumor of the uterine appendages on the left side, with retroflexion of the uterus, was believed to exist. Upon opening the abdomen in the Trendelenburg posture the tumor was found to be the enlarged and movable spleen. As the diaphragm was unusually high and difficult of access, ventrofixation of the uterus was effected, and a second incision made in the midaxillary line from the costal arch to the crest of the ilium, and another at right angles to this at the level of the tenth rib and par-

allel with this. Both of these incisions were continued down to the peritoneum. The parietal peritoneum was detached with the hand from the fascia above and below, and an incision made in it just large enough to permit the smallest diameter of the spleen to pass. When this organ had been removed the opening was then closed, and the parietal peritoneum attached to the pedicle of the spleen. The latter was now placed in its usual situation, though outside of the peritoneal sac. It was attached by a ligature to the tenth rib, and below it a pocket was made by bringing together the adjacent fat and connective tissue, and a number of sutures were passed through the surface of the spleen itself. The wound was carefully closed, and the operation proved to be a success.

Successful Removal of the Breech-pin of a Gun from the Orbit.—WENYON (*British Medical Journal*, No. 1815, p. 907) has reported the case of a man, 31 years old, who was injured by the bursting of a gun. Coming under observation two months later, he presented a cicatrix on the right side of the nose, above which was a sinus, the orifice of which involved the inner canthus of the right eye, and extended downward and inward for about a centimeter. The sight of the right eye was entirely lost, and the anterior surface of the globe was so uniformly red that the cornea could hardly be distinguished from the surrounding conjunctiva. There was no perceptible enlargement or protrusion of the eyeball, and this did not appear to have sustained any mechanical injury or loss of tissue. The sinus gave exit to a continuous discharge of slightly putrid pus, and the patient complained of constant headache and occasional dizziness. The pain was referred to the right frontal and temporal regions, and the skin of this part of the head presented a slight blush, but there was no superficial tenderness. On the introduction of a probe the lower edge of a hard, metallic substance was detected at a depth of about one inch posteriorly from the orifice of the sinus. Several attempts to remove the foreign body through a slightly enlarged opening were unsuccessful. Accordingly, the incision was carried along the side of the nose to the nostril, laying open the right nasal cavity. The foreign body was then seized with a strong pair of forceps, and the complete breech-pin of a gun removed. It measured a little more than three inches in length, and weighed 2½ ounces. It had evidently lain at the back of the orbit, inclined upward and slightly backward from the point of entrance, at an angle of about 45°. The symptoms disappeared with the removal of the body.

Bilateral Gangrenous Stomatitis.—MCDONALD (*Medical Herald*, vol. xiv, No. 10, p. 478) has reported the case of a girl, 3 years and 2 months old, who, in the course of an undetermined febrile affection, presented a sore mouth and picked out two of her teeth. In the course of a week the cheek had become swollen and was red and shining, and soon the other cheek became similarly affected. In the course of another week the affected parts of the lips and cheeks became blue and dark, and the discoloration spread on either side. Antiseptic lotions and powders seemed to cause a drying-up of the dead tissues, but failed to check the spread of the gangrene. The condition thus progressed for four or five

weeks. The affected area included the cartilage of the nose, the upper and the lower lips, and three-fourths of each cheek. An offensive odor emanated from the child, whose body had become greatly emaciated. Respiration was accelerated, and coma set in and death ensued.

THERAPEUTIC NOTES.

Death from Potassium Permanganate.—THOMSON (*St. Petersburg medicin. Wochenschr.*, 1895, No. 38, p. 329) has reported the case of a man, 22 years old, who was found upon the street with a partially emptied bottle of potassium permanganate in his pocket, of the contents of which he had taken between four and five drams. Undissolved crystals of the salt were visible at the corners of the mouth. The face was pale and expressive of pain; the eyelids were half-closed; the mouth wide open; the lower lip and the protruding tongue swollen, black in appearance, and covered with dark crusts. Dark streaks passed from the angles of the mouth to the chin. Respiration was difficult, and attended with sounds of stenosis. The pulse was frequent and small. There was considerable muscular relaxation, and speech was almost impossible. An esophageal sound encountered obstruction at the level of the cricoid cartilage. In the course of the manipulations intense dyspnea suddenly manifested itself, for the relief of which tracheotomy became necessary. Upon the supposition that considerable quantities of potassium permanganate had gained entrance into the stomach, in conjunction with the failure to reach this viscus through the esophagus, and in anticipation of the subsequent necessity of feeding, gastrotomy was undertaken in order to effect lavage. The gastric contents responding to tests for potassium permanganate, the irrigation was repeated after an interval of four hours. Respiration, however, continued difficult; the pulse became rapid and feeble, and death occurred amid signs of cardiac paralysis. Upon post-mortem examination the lips and the tongue were found edematous. The mucous membrane of the mouth, pharynx, and larynx was eroded. The trachea, the bronchi, and the esophagus were not attacked. The blood in the large vessels was diffuent and cherry-red in color. The heart was of normal size, and presented a number of petechiæ beneath the pericardium. The cardiac veins were distended, the arteries elastic and not dilated. The myocardium was flabby. The left ventricle contained a small amount of blood; the right rather more. The auricles were filled, but not distended. The lungs contained much blood. Blood from the heart and its afferent vessels, the urine, and a piece of the pectoralis major muscle of the left side failed to yield the reactions of potassium permanganate. The conclusion is reached that death did not result from intoxication, but from the corrosive action upon the upper respiratory and digestive tracts, resulting, in conjunction with the necessary operative procedures, in cardiac failure.

Recovery from a Large Dose of Cocain.—At a recent meeting of the Philadelphia County Medical Society, BALL reported the case of a woman, 35 years old, who swallowed with suicidal intent 6 drams of a 5 per cent. solution of cocain, representing 18 grains of cocain. The patient had for 10 years been a sufferer from

stricture of the rectum, for the relief of which she was accustomed to apply cocain topically on a pledget of cotton. After the ingestion of the toxic dose dryness of the throat soon appeared, and on attempting to rise from her couch to summon aid the woman felt dizzy and fell to the floor. Raging delirium set in and the patient attempted to throw herself from a balcony to the ground. She talked loudly, incessantly, and incoherently. Physical restraint was necessary and the hypodermic administration of morphin was resisted, although a third of a grain was given by the mouth. The pupils became widely dilated, the pulse hardly perceptible and very frequent. The tongue was from time to time protruded spasmodically and the teeth were gritted together in a tetanoid manner. At one moment the patient was depressed, at another exalted. She frequently rubbed her hands, which she complained of looking dirty. The tongue was much congested and cyanotic and anesthetic. There was no appreciable anesthesia elsewhere. The administration of black coffee and lukewarm water was followed by free emesis. Two hours after the poison had been taken the patient was resting quietly, with the pulse stronger but still frequent. Thirst was extreme and motility greatly impaired. Emission of urine was secured, and strychnin, gr. $\frac{1}{10}$, and champagne were administered. Perspiration set in and pallor gave way to a slight glow. Four hours from the beginning the patient was sleeping soundly and the pulse had fallen to 100 and was much stronger. After a time consciousness returned, but there was no recollection of time and little of previous events. On the following day the patient was weak; her body felt bruised and her limbs heavy and useless. Feces and urine had been passed without difficulty. Appetite was impaired and thirst was still present. The tongue was no longer congested and sensibility had returned. The patient gave a history of having taken an overdose of cocain in the dry state on a previous occasion, when the delirium was acute and was overcome by the use of morphin in large doses.

The Treatment of Diphtheria with the Antitoxin.—HEUBNER (*Deutsche medicin. Wochenschr.*, 1895, No. 42, p. 687) reports the treatment of 117 cases of diphtheria with the antitoxin in addition to those previously reported, making a total of more than 300 cases. Among the 117 there were 12 deaths—10.2 per cent. There were 97 cases of pure diphtheria, with 10 deaths (10.3 per cent.); and 20 cases of complicated diphtheria, with 2 deaths (10 per cent.). Among 220 cases treated from May, 1894, there were 25 deaths—11.4 per cent. There were 174 cases of pure diphtheria, with 15 deaths (8.6 per cent.); and 46 cases of complicated diphtheria, with 10 deaths (21.7 per cent.). Among the 110 uncomplicated cases treated between the first and third days there were but 6 deaths (5.4 per cent.).

Official statistics show that the mortality from diphtheria in the cities of Berlin, Dresden, Leipsic, Munich, and Hamburg during the first half of 1895 was conspicuously lower, both absolutely and relatively, than during any year covered by the records, although the whole number of cases of the disease, in the city of Berlin for instance, was larger and the proportion of cases received into the hospitals was smaller.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed *exclusively* to THE MEDICAL NEWS will after publication be liberally paid for (accounts being rendered quarterly), or 250 reprints will be furnished instead of payment. When necessary to elucidate the text, illustrations will be engraved from drawings or photographs furnished by the author.

Address the Editor: GEO. M. GOULD, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.

Subscription Price, including postage in U. S. and Canada.

PER ANNUM, IN ADVANCE \$4.00
SINGLE COPIES10

WITH THE AMERICAN JOURNAL OF THE
MEDICAL SCIENCES, PER ANNUM 7.50

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
Nos. 706 & 708 Sansom Street,
PHILADELPHIA.

SATURDAY, NOVEMBER 9, 1895.

MAGIC AND MEDICINE.

PROBABLY most of us would resent the suggestion that there is any further connection between the terms magic and medicine than the identity of their first letters, but, unfortunately for our pride, it goes much further. Historically considered, one is the lineal descendant of the other. The earliest physician was the priest, the shaman, the conjurer, who even to this day in certain tribes bears the suggestive name of "medicine-man," and the curing of diseases constituted no small part of his activities. Indeed, his priestly or magic functions really grew out of his medical ones, and represent a later stage of thought, wherein all misfortunes, bodily and elemental, are alike regarded as due to the activities of evil spirits. The earliest deities of the race were personified discomforts, and some present-day divinities even yet bear traces of this origin. Our magnificent system of modern medicine bears evident signs of its demonistic descent.

It may sound strange, especially in view of recent developments, to assert that not only medicine and religion, but also science and religion, have a common ancestry. Yet such is literally the fact. The primitive priest-physician is called into being for and principally concerned with the removal or relief of

discomforts and misfortunes, both individual and racial. His function is alike to bring rain, to avert storms and floods, to secure abundant harvests, to guard against defeat in battle, and to allay fevers, to cure convulsions, to defend against the "evil eye." To aid him in one class of functions he appeals to and studies the only manifestly heavenly bodies visible to him, the stars, and from this blind beginning astronomy, with its descendants, physics, mathematics, and navigation, is born. Many, if not most, of the stars and planets bear to this day the names that were given to them when worshipped as deities and used in the construction of horoscopes and predictions.

To assist him in the individual class of his duties the priest-physician impresses into the service the neighboring plants, herbs, and saline earths, first probably from their offensive taste or symbolic color, and thus arose the beginnings of botany, of chemistry, and their descendant, biology. The names of not a few of our familiar plants, some of which have lost all connection with the *materia medica*, such as "fever-few," "liver-wort," "sorrel" ("sore-heal"), "bone-set," etc., bear witness to this genealogy.

As the tribe grew, and its institutions with it, these two fields of effort became gradually separated from each other and assigned to different individuals and classes, but they have always displayed a remarkable tendency to become united again, and even to this day have never become entirely separate and distinct. For instance, in the Middle Ages monks were almost the only professed physicians, and such non-clerical physicians as existed relied largely upon charms, exorcisms, entrails, magic salves, and "spiritual" agencies generally in their practice.

In the brightest days of the most brilliant civilization that the world has ever seen the descendants of Esculapius formed a regular priestly caste and offered sacrifices, and these are merely a few of thousands of instances that might be cited to prove the connection between the two professions. Even in the nineteenth century the relation still lingers in the not infrequent claim to the power of healing disease under certain circumstances, yet made by some clergymen of almost every church and creed. As an historic fact it is supported by a simply overwhelming array of authorities from Humboldt and Tyler to Spencer and Draper.

And even if all these matters of record were

swept away and forgotten the medicine of the earlier part of this very century, the domestic medicine of to-day, which is simply the professional therapeutics of a few generations before, nay even our most modern practice itself, bears scattered but unmistakable marks of their actual genesis.

That a considerable part of domestic medicine is evidently of demoniacal origin—in more senses than one—few will care to deny. The striking prominence among “household-remedies” of horribly bitter and nauseous “yarb teas,” of cherry-bark, of quassia, of asafetida, the recommendation of such remedies as a roasted mouse eaten whole, snake-broth, drinking urine, hot blood, etc., etc., the confidence imposed in violent purgatives and emetics, are obvious survivals of the magician’s principle of administering nauseous messes of every description in the hope of disgusting and driving out the evil spirit that causes the disease. Their whole medicinal value lies in their offensiveness. Such common practices as the charming away of warts, the wearing of iron rings, and the carrying of potatoes or chestnuts in the pocket to “draw out” rheumatism, are also of unmistakable character, and dozens of others might be mentioned.

But it was in the professional practice of fifty or seventy-five years ago that these survivals most abounded. The extraordinary prevalence of bleeding, for instance, was an almost pure relic of barbarism. Although useful under certain circumstances, and most gravely and learnedly defended on far other grounds both at that time and since, its senseless, indiscriminate use was a plain remnant of the shaman idea that there is in the system some spiritual or material *materies morbi* which must be got rid of by the most vigorous means in our power short of actually endangering the patient’s life. And, perhaps, our sturdy phlebotomist-ancestors did not always stop short of this danger-line. The universal practice of systematically starving or “reducing” all “sthenic” forms of disease was originally based upon the same idea, although far different and more plausible grounds were avowed for its continuance.

It was scarcely a generation ago that GRAVES thought it worth while to order carved on his tombstone, “He fed fevers,” and we are more than inclined to suspect that the undue prominence of gruels, beef-teas, soups, and “slops” of every description in the sick-room dietary of to-day is a belated survival of or reaction from the same

“demon-starving” theory of medicine. The remarkable manner and heroic doses in which calomel and other violent purgatives, tartar emetic, lobelia, and veratrum were administered in season and out of season, were also obvious survivals of a similar idea. A most significant fact in this connection is that almost every one of these once-vaunted methods and drugs has fallen into disuse, if not disgrace, as the shadow of the superstitions that gave them birth have been dispelled. The only exception of note is calomel, which, however, is used to-day in far other doses and for almost totally different purposes.

But surely there are no such traces of lowly origin to be found upon the bright escutcheon of that queen of the arts and sciences, modern medicine. Take up a prescription-blank and say whose image and superscription that is in its upper left-hand corner. On recent blanks it is ingeniously twisted into a rude letter “R,” with a stroke across its last flourish, and we teach the wondering tyro that it is a contraction of “*Recipe*,” “take.” But turn to a blank of twenty years ago or a German or English blank of to-day and it appears as a character widely different from any known letter of the alphabet, and a little further investigation reveals it as nothing more nor less than the zodiacal sign of the god Jupiter, whose blessing is thus invoked upon the succeeding formula—which often needs it badly enough.

This, of course, is a mere fossil imprint upon our escutcheon, of much historic significance, but exercising no influence upon our present thought. But are there no genetic traces that are still alive and actually affect our conceptions of disease and its cure? Take, for instance, that extraordinary and mysterious disease hydrophobia, of which we hear so much and see so extremely little, and which several competent authorities, who have made for years a special study of collecting and analyzing all reported cases of it, declare is largely made up of either tetanus or hysteria, most commonly the latter. The picture at least of this horrifying disease is an evident and striking survival and copy of the old Norse legend of the “were-wulf” and its madness-producing bite. This is also shown by the fact of its being popularly and even semi-professionally believed to be most prevalent during the “dog-days” or months in which the “dog-star,” Sirius, is in the ascendant. The “muzzling-ordinances” that our “city fathers” are annually delivered of

in July and August are actually still based on this idea. We cover its nakedness nowadays by the declaration that hot weather predisposes to the disease, in spite of the fact that it is almost unknown in the tropics and can be shown by statistics to be completely independent of the temperature, occurring in even Iceland and Greenland. In fact, it would hardly be too much to say that the geographic distribution of hydrophobia is closely dependent upon that of the "were-wulf" legend.

Has the tendency to regard mere bitterness or distastefulness as a medicinal property entirely died out? Have we not yet in our *materia medica* a class of "simple bitters," drugs of whose physiologic effects we know absolutely nothing except that they taste bitter and are traditionally reported to have an improving effect upon the appetite? What claim have quassia, gentian, calumba, etc., to a place among our remedies except their abominable taste?

There is another therapeutic belief that is a positively beautiful case of survival still in full force among us. And that is the mineral-water fad. Our favorite prescription for lithemia, for rheumatism, for dyspepsia is, as it was a hundred years ago, "a course of the waters" of some spring, either at first hand or in bottles. The shelves and the cellars of our drug-stores, our restaurants, our bars, nay even of our groceries and residences, are fairly loaded with green bottles labelled "Hathorn," "Carlsbad," "Apollinaris," "Hunyadi," etc. Their wonderful virtues—and still more wonderful formulas—are spread upon the advertising pages of all our journals, and there is no scarcity of medical names to back up their pretensions. They differ widely in their chemic composition, but all are beneficial in all sorts of troubles. This leads one to suspect that their most potent remedial principle is that possessed by them all in common—H₂O. Indeed, most of the benefit derived from their use is now attributed by thoughtful observers to their "flushing" effects, and it is significant in this connection that the one water which has by far the largest sale contains simply pure water and enough carbon dioxide to give it sparkle and "snap." Originally it was "the sparkle" which was regarded as the most important part, for, strange as it may seem, the belief in mineral waters can be traced directly to the superstition that springs that bubbled or seethed or spouted were literally inhabited by spirits that caused the ebullition. The "troub-

ling of the waters" in the healing pool of Bethesda, as related in the Gospels, is a familiar illustration. Hence their wonderful potency as remedies, and especially if they were either hot or sulphurous, which proved them to come directly from the nether world.

But probably the most vigorous and striking survival of the demon-theory of disease is our irrepres- sible tendency to regard disease as a distinct entity of some sort which is to be "treated" or "driven out." We speak of "disease-processes" as if they were something entirely new and foreign to the tissues, instead of mere health-processes gone wrong, life out of place. The mental habit of far too many of us is simply to determine the nature or often merely the name of the disease and then apply the remedies indicated in that disorder. We are still longing for "cures" and "specifics," for antidotes and abortions.

Not a little of the wonderful vogue attained by the germ-theory of disease is due to the high degree in which it gratifies this tendency. It serves to embody or personify disease as it were, and gives us something definite and separate to attack. In early days a demon was the explanation for everything. Now it is a germ.

EDITORIAL COMMENTS.

The Coroner as a Pathologist.—We believe the coroner's office is intended for the investigation of deaths from doubtful causes. Of course, in the vast majority of instances, death is the result of disease, and a physician's certificate is given. But whenever a human life is ended by suicide or accident, by inadvertence or carelessness, or under circumstances giving rise to suspicions of foul play, the coroner holds an inquest—makes a preliminary inquiry—to ascertain where the responsibility lies. And if in the opinion of his jury the loss of life has been due to fault on the part of anyone, that person may be held for the further action of the proper court.

Here, however, it seems to us that the coroner's duty ends. Should two physicians be at variance as to the question whether in a given case the certificate should read "typhoid fever" or "diabetes," we think it would be absurd to ask that the point should be decided in the coroner's office.

But the Coroner of Philadelphia has shown himself to have a higher view of his functions. He is ready to tackle pathologic problems; to assume authority in matters pertaining to this science. Some time ago he announced that in his opinion there was no such thing as heart-failure, and that he should decline to receive any statement from physicians giving this as the cause of sudden death.

A few days ago, a child died with symptoms suggesting hydrophobia, it having been bitten by a dog

some four or five days previously. According to the daily papers "it has always been the custom of the coroner's officials to ignore the existence of hydrophobia, maintaining that the deaths credited to that cause are always from convulsions. . . . In the case of the Jones child, Deputy Coroner Dugan determined to set the matter at rest once for all, and so a live rabbit was inoculated with virus from the supposed hydrophobic victim." As the rabbit did not die, he stated that the child had not had hydrophobia, and that there was no such disease. He ordered that the cause of death should be recorded as "convulsions."

Now this pathologist is perfectly satisfied with a certificate stating that a patient died of "dropsy," whereas every physician knows that dropsy is a mere symptom, and that no one ever dies of it. It would be about as explanatory to ascribe death to "pallor." We are aware that there have been doubts expressed by members of our profession as to the existence of such a disease as hydrophobia; but they have not yet found advocates of such authority as to outweigh the opinions of Pasteur, or to set aside the practice instituted by him.

When the Coroner and his jury have investigated a case and have decided that death was the result of natural causes, we have no objection to make, although we do not think that they represent the highest type of intellectual or scientific development. They have merely declared that they see no evidence of suicide or of fault on the part of some person other than the victim. But when the Coroner undertakes to offer the medical profession instruction in pathology and diagnosis—to tell them what they are to see or not to see in dealing with disease—we cannot recognize his authority. He may or may not believe that the stoppage of a weak heart is the only assignable cause of death in any case; he may hold what views he will as to the true nature of the disorder known as hydrophobia, but he has neither the capacity nor the right to dictate to the physician with regard to things which belong altogether within the latter's province.

There are communities which are well ordered and prosperous, in which the public welfare is maintained and the medical profession stands high, without any coroner at all. There are intelligent people who consider his existence as a relic of barbarism. Perhaps they are right.

Concerning Schlatter.—As we are likely to hear more of Schlatter and similar persons in the future, we think it well to copy from the private letter of an Eastern physician the following portions telling of a visit paid the "healer" last week in Denver:

He stands in the front yard of an unpretentious house in one of the city's suburbs; a common board-fence separates him from the people. They come in single file, kept so by a railing extending about a hundred feet along the fence. The line at this time of my visit (2 P.M.) was nearly two squares long. Some were standing, some sitting upon rude benches, and some upon their own camp-stools. It is said that people come as early as 2 o'clock in the morning. He has been seeing over a thousand a day for weeks past. They come from all classes. They are not, in the main, a religious-looking crowd. Few seemed to me to have the semblance of a religious attitude. Indeed, it is stated that but few of the professed cures are professing Christians. The crowd of sight-seers outside of the line are well-behaved.

At no time is there any hilarity. Indeed, the aspect of this aggregation is sober. No policemen are ever needed.

The "healer" is a tall, heavily built man. His features are large and show strength rather than refinement and intellect. His hands are large and strong, and from the size of his shoes I should suppose he would have difficulty in finding a pair to fit him in an ordinary shoe-store. His long hair, parted in the middle and combed roughly back, falls upon his shoulders. It is straight, coarse, and black, mixed with gray. His moustache and whiskers are somewhat curly and of the same color. His nose is somewhat flattened and twisted, as though from an injury. His brow is broad and of considerable height. What attracts one the most is his small, deeply set, restless, bright-blue eyes. His whole form speaks of an earnest, patient continuance in what he conceives to be well-doing.

As a subject approaches him, in turn, he grasps his right hand firmly (sometimes with severe pressure), and, if the subject has brought handkerchiefs with him to be "blessed," he squeezes them in his left hand, often pressing them hard down upon the upper board of the fence. He rarely looks at the subject after taking his hand, his eyes wandering restlessly and seemingly aimlessly about, mostly in a horizontal plane above the subject's head. His brows contract and his lips move slowly, but no words are audible. He gives about 25 seconds to each one, after which he releases his hand, gives him his handkerchief or other article he has "blessed," and indistinctly mutters some word which sounded to me like "tonk" (I was but 5 feet away from and directly in front of him). A friend by my side thought he meant to say "next," but he never looked in the direction of the next, and spoke too indistinctly to be understood by him. Once he took a cripple's both hands in his, while a rather frivolous young man with a weak profile, the antipodes of the healer, but who seemed to be his only assistant inside the fence, toyed with the cripple's cane, testing its iron point in the hard earth, etc. The cane was returned to the man with a bundle of handkerchiefs which had been blessed, and the aforesaid officious young man told him to "lay them on the sore parts," and that washing would not destroy the virtue in them. Once a crippled old man got near to the healer without being in line, and unobserved by the strapping assistant; the healer attended to him without seeming to notice the break in the rule or to care for it. He goes on with his work, as it were, automatically. He receives no money nor appears to think about it. I saw no money offered during my time of observation.

He wore a rather short coat, likely given him by some friends to replace the common blouse he had been wearing through rain and even snow. He seemed to be honest in his efforts to do good, and not to be seeking for fame. He recognizes no subject, makes no discrimination, asks no questions; indeed, keeps at his work like a man driven to do so by some power beyond his disobeying. If a mother brings a child he takes its hand, does not even scan it to see what its deformity may be, but goes through the 25 seconds of moving lips, restless wandering eyes, and contracted brows, and then drops it, and reaches for its mother's hand and goes through the same process without ascertaining whether she is an invalid or not. Occasionally he yawns, rubs his head or lifts his feet to shift his position, all of which he does in such a manner as not to let the people feel that he is tired. In none of his actions does he seem to bid for even the sympathy of the people. He keeps at his task, slighting no one, never hurrying to get through, never looking along the line to see how many remain to be treated.

When the people pass from him they generally look subdued, sometimes affected to tears.

I saw no marvellous cures on the spot. One woman insisted that her imbecile boy walked better. Many patients say they have been benefited, but rarely show real evidence of it.

To sum up: Evidently this man is possessed with a form of religious monomania. He is doing what his impaired mind tells him is his duty, regardless of his own comfort, and even at the risk of his life. What cures there are come from the mental impression he is able to make upon his subjects.

He is harmless, not a fanatic. He does not present an array of canes, crutches, or other make-believe evidences of his healing-powers. He makes no show at all of healing-power. He simply stands long, weary hours, patiently going through his simple form for all who may come to him. Physically he shows no signs of breaking-down, and as his reputation is on the increase it is probable that many of the halt and maimed and blind will have the opportunity of seeing what he can do for them.

I went away feeling a deep sense of pity for the poor man whose unbalanced mind compels him to undergo such hardships, and I hope that by some means the proper authorities will be enabled to take him in charge and properly care for him. I did not feel the same pity for the people.

Physicians as Poets.—It is always pleasing to find a largeness of mind and sympathy for other things than those that pertain to one's special department of work, and it is particularly so when we find physicians with creative power in the department of general literature. We are all proud of our Holmes's, Doyle's, Weir Mitchell's, and the rest, and are glad by them to illustrate to the world the truth that medicine is no narrowing and belittling sphere of human activity. We are pleased to bring a new proof of this before the profession in the fact of a recent volume of fine verse by a well-known and highly respected physician of Philadelphia, Dr. Edward W. Watson. *To-day and Yesterday* presents, we are sure, a wider range of theme, a broader interest in the great tragedy of human life, a keener perception of and sympathy with the struggle between science, faith, and ethics, than any other first volume of poetry known to us. Here is no piping falsetto or monotone, but a voice with rich and varied range, singing the ever-varying song of humanity's suffering and joy, love and life.

A New Method of Advertising is fast growing in fashion—and it is reprehensible. It consists in the making of cut-and-dried abstracts of their articles, lectures, clinics, etc., by physicians themselves, who then send them to many journals. It is hoped that at least only medical journals are thus supplied. But even if only to them the practice can hardly be excused, because editors should be capable both of choosing articles to epitomize and of making their own abstracts.

REVIEWS.

MEDICAL DIAGNOSIS, WITH SPECIAL REFERENCE TO PRACTICAL MEDICINE. A Guide to the Knowledge and Discrimination of Diseases. By J. M. DA COSTA, M.D., LL.D., President of the College of Physicians of Philadelphia; Emeritus Professor of Practice of Medicine and of Clinical Medicine at the Jefferson Medical College, Philadelphia; Physician to the Pennsylvania Hospital, etc. Illustrated with engravings on wood. Eighth edition, revised. 8vo, pp. 1104. Philadelphia: J. B. Lippincott Co., 1895.

DA COSTA'S *Diagnosis* has already a secure place among the classics of medical literature. A new edition, a revision, of such a book affects, therefore, but little the body of the work, which, at most, requires here a little trimming, there a little addition, by reason of the clearing up of matters previously doubtful, and enlarge-

ment of view due to increasing knowledge. The descriptions of diseases and their differentiation as contained in this volume may well serve as models of clearness and completeness, and though time may alter our views as to etiology and pathology, not to speak of prognosis and treatment, the clinical pictures so admirably executed will retain a permanent place in the galleries of medical art. The present revision has been extensive and, in some respects, radical. Additions have been made where it was necessary to bring the work into line with the present advanced position of clinical medicine, and a certain amount of matter that has been left behind in the march of events has been replaced by newer and better. The book is thus increased in size nearly one-hundred pages, and the text is illuminated by an added number of well-executed illustrations, a number of which are colored. A judicious position of conservatism has been taken with regard to the newer pathology born of modern bacteriologic investigation, accepting that which has been proved and assuming a waiting and receptive attitude toward that of which the proof is in varying degree yet incomplete. In addition to the Russian translation of the work there exists also an Italian, and a third edition of the German translation is in course of preparation. Despite the many good books that have appeared during the thirty-one years' existence of this one, Da Costa's *Diagnosis* easily remains the best of the kind extant.

A SYSTEM OF SURGERY. By CHARLES B. BALL, M.D., T.C.D., ARTHUR E. BARKER, F.R.C.S., WILLIAM H. BENNETT, F.R.C.S., ANTHONY A. BOWLBY, F.R.C.S., STANLEY BOYD, M.B. Lond., W. WATSON CHEYNE, F.R.C.S., W. BRUCE CLARKE, M.B. Oxon., H. H. CLUTTON, M.B. Cantab., H. PERCY DEAN, M.S. Lond., ANDREW DUNCAN, B.S. Lond., A. PEARCE GOULD, M.S. Lond., FREDERIC W. HEWITT, M.D. Cantab., JONATHAN HUTCHINSON, JR., F.R.C.S., W. ARBUTHNOT LANE, M.S. Lond., C. B. LOCKWOOD, F.R.C.S., G. H. MAKINS, F.R.C.S., J. H. MORGAN, F.R.C.S., HENRY MORRIS, M.B. Lond., HERBERT W. PAGE, M.C. Cantab., BERNARD PITTS, M.C. Cantab., A. MARMADUKE SHEILD, M.B. Cantab., J. BLAND SUTTON, F.R.C.S., FREDERICK TREVES, F.R.C.S., HERBERT F. WATERHOUSE, F.R.C.S., G. SIMS WOODHEAD, M.D. Edin. Edited by FREDERICK TREVES, F.R.C.S., Surgeon to and Lecturer on Surgery at the London Hospital; Examiner in Surgery at the University of Cambridge. Vol. I. With two colored plates and 463 illustrations. 8vo, pp. 1152. Philadelphia: Lea Brothers & Co., 1895.

WE have here the first volume of a work projected on somewhat the same plan as Holmes' great *System of Surgery*, the third and last English edition of which appeared only twelve years since. Yet in this brief space of time there has been so great a change in surgical theories and methods that even that monument of profound learning, studious research, and practical knowledge cannot now be regarded as setting forth the existing state of the science and art of surgery.

Mr. Treves says in his preface that there has been no attempt on the part of himself and coadjutors to produce a cyclopedia, but that they have sought in every way to make their work useful to the student and prac-

tioner of surgery. He does not propose to dwell upon the actual details of operative procedures, but to set forth the pathology, clinical manifestations, and treatment of the various diseases and injuries that come within the scope of surgery. He further states that there has been no effort to secure an ideal uniformity of opinion, in cases in which the same subject or part of a subject happens to be dealt with by more than one writer holding differing views with regard to it.

Sixteen of the twenty-five authors have taken part in the preparation of this volume.

The opening article is by Mr. Woodhead, on the general subject of Surgical Bacteriology; it is a remarkably clear exposition of the present state of that most important science. Of course this matter figures frequently in the subsequent chapters. Inflammation, Suppuration, Ulceration, Gangrene, Syncope and Shock, Wounds, and Contusions are discussed by Mr. Cheyne; Erysipelas, Pyemia, Tetanus and Tetany, Burns and Scalds, by Mr. Lockwood.

A very brief article by Surgeon-Major Duncan on Military Surgery is devoted almost wholly to gunshot-wounds. The subject is treated in general terms. We believe that many surgeons in civil life have a wider and more familiar acquaintance with injuries of this kind than army medical officers have. The author makes no reference to the recorded experience of our late Civil War.

Mr. Treves himself contributes papers on the influence of Constitutional Conditions on Injuries, as well as on Tuberculosis, Hemophilia, and Hysteria.

On the subject of Anesthesia Mr. Hewitt writes ably, but altogether from a London standpoint. We cannot think the complicated inhalers so commonly employed by British surgeons have any advantage over the simple napkin. And we believe the true inwardness of the whole matter is better understood from careful clinical observations than from experiments in the laboratory.

Surgical Diseases due to Microbic Infection and to Parasites are discussed by Mr. Makins, who later writes on Rickets also.

Syphilis (including chancroid), Gonorrhea, and Diseases of the Skin have been assigned Mr. Jonathan Hutchinson, Jr.

A very interesting article on Tumors and a special essay on Diseases of the Jaws have been contributed by Mr. Sutton.

The remainder of the work is devoted to the consideration of diseases and injuries to the several systems: those of the Bloodvessels, including Aneurysm, by Mr. Gould; of the Lymphatics, by Mr. Morgan; of the Nerves, by Mr. Bowlby; of the Bones, by Mr. Boyd and Mr. Clutton; and of the Joints, including Dislocations, by Mr. Sheild and Mr. Barker.

We regret that our limited space forbids a more extended analysis of the articles enumerated. They embody the prevailing principles of the great British school of surgery, set forth by some of its ablest living representatives. Very little reference is made to Continental authorities, hardly any at all to the writings of our own countrymen. A striking feature of the work is the marked spirit of conservatism which pervades its pages. We find no hint in the present volume as to the proposed number of its successors, or the arrangement of the material to be contained in them. But we

predict that the completed work will be recognized as a very important addition to surgical literature.

INDEX-CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, UNITED STATES ARMY. AUTHORS AND SUBJECTS. Vol. XVI, W-ZYTHUS. Washington: Government Printing Office, 1895.

ALPHABETICAL LIST OF ABBREVIATIONS OF TITLES OF MEDICAL PERIODICALS EMPLOYED IN THE INDEX-CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, UNITED STATES ARMY. Vol. I to Vol. XVI, inclusive. Washington: Government Printing Office, 1895.

THESE, the concluding volumes of this splendid work, constitute the capping-stone of a noble monument of enterprise and industry, which does credit alike to the Surgeon-General's Office of the U. S. Army, to its collaborators, principal among whom stands Dr. John S. Billings, and to the American medical profession. In it are contained 12,759 author-titles, representing 4857 volumes and 11,613 pamphlets; besides 8312 sub-titles of separate books and pamphlets, and 13,280 of articles and periodicals. The announcement is made that the manuscript of a second series, including all the titles of books and articles received too late for insertion in the series just ended, has been prepared, and will probably make five printed volumes of the same size and style as those constituting the first series. The appropriation for the first volume of the second series has already been granted by Congress, and the manuscript for the first volume is nearly ready for the press. It is interesting to note that the total 16 volumes of the *Index-Catalogue* contain of author-titles 413,531: 176,364 titles, 85,663 volumes, 151,504 pamphlets; and of sub-titles 679,669: 168,557 book-titles, 511,112 sub-titles; and portraits 4335. Dr. Billings concludes as follows in the letter accompanying his presentation of the 16th volume to the Surgeon-General: "This is probably the last volume of the *Index-Catalogue* which will be issued under my personal supervision, and, in closing the work, I can only say that it has been to me a 'labor of love,' and that I am very thankful that I have been allowed to complete it, so far as the first series is concerned." The medical profession certainly owes Dr. Billings and his collaborators a profound debt of gratitude for this splendid piece of work.

EXERCISE AND FOOD FOR PULMONARY INVALIDS. By CHARLES DENISON, A.M., M.D., Professor of Diseases of the Chest and of Climatology, University of Denver; Ex-President American Climatological Association. Denver: The Chain & Hardy Co., 1895.

"PULMONARY invalid" can hardly be considered a term to delight the lexicographer, but it is not much worse than the French *poitrinaire*. The author's pathology is not accurate, but his therapeutic aim, the invigoration of the patient, is the true one. On the whole, his advice as to food and exercise is sound, but like many modern writers he seems to think that the science of medicine began yesterday, and while his own work is creditable enough he either neglects to acknowledge his indebtedness to those who have suggested it or carelessly makes acknowledgment to the wrong person.

Thus he seems not to know that what he calls the "Howe tube" is the device of Ramadge, though this information is readily accessible, not only in Ramadge's own works, which are perhaps too ancient to be referred to in these progressive times, but in a very recent encyclopedic article. The "manometer" described as the author's device is a useful instrument, and ought to be generally employed, but it should be credited to Waldenburg, who devised and described it twenty years ago under the name of "pneumatometer." In this country Elsberg and others have written of it, giving proper credit to Waldenburg. The author's "Inhaler and Exhaler" is a useful modification of the instrument of an American observer, described some years ago as "Pneumatic Resistance-Valves." His "Emphysema-Jacket" is ingenious, largely original, and seems to be good in theory. We should be glad to know more of its practical utility. The benefits of inhalations of compressed air and of exhalations into rarefied air should be, but are not, mentioned. The author's diet-lists are useful and the brochure as a whole should do good.

PHYSICAL AND NATURAL THERAPEUTICS; THE REMEDIAL USES OF ATMOSPHERIC PRESSURE, CLIMATE, HEAT AND COLD, HYDROTHERAPEUTIC MEASURES, MINERAL WATERS, AND ELECTRICITY. By GEORGE HAYEM, M.D., Professor of Clinical Medicine in the Faculty of Medicine of Paris. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With 113 illustrations. Philadelphia: Lea Brothers & Co., 1895.

THIS is a work of 419 pages, 200 of which are given over to the consideration of electricity. Climate, mineral waters, thermic agents, and atmospheric pressure are some of the other physical and natural agents treated of. The various European climatic resorts are described at length, and in a separate chapter the editor briefly mentions the more important American resorts.

The chapter on Hydrotherapeutics is short and fails to mention the use of lavage for stomach-diseases or the cold bath in pneumonia; the Brand method in typhoid is described in twenty lines added by the editor.

Other important physical agents not considered in the book are massage, gymnastics, and exercise.

The part on electricity is quite complete, containing descriptions of the various apparatus in use, and giving in detail the facts of electro-physics and electro-physiology, as well as the manner of their application in the treatment of disease. This section has been largely added to by the editor, and contains all that is new on the subject.

MODERN MEDICINE AND HOMEOPATHY. Two addresses by JOHN B. ROBERTS, A.M., M.D. Points of Similarity Between Us and Homeopathic Physicians. The Present Attitude of Modern Medicine and Physicians Toward Homeopathy. Philadelphia: The Edwards & Docker Co., 1895.

THE author states in his preface that a desire to look at homeopathy without prejudice caused him "to devote several years to the study of books and journals written and edited by homeopathic physicians. Two presidential addresses were written as a result of this

investigation. These are now reprinted, in the hope that some members of the medical profession may find in them reasons for abandoning a sectarian name, and that others may see the impropriety and folly of proscribing those whose opinions conflict with their own." As a matter of fact, nobody does "proscribe those whose opinions conflict with his own;" but Dr. Roberts is perfectly sincere in his belief that the interests of science and humanity will be best served and the folly of homeopathy made indubitably evident when physicians cease to draw any distinction between those educated men who term themselves homeopathic physicians but are not, and other educated men who refuse to accept sectarian designation. No one could demonstrate more forcibly than Dr. Roberts has done the essential and irreconcilable differences between scientific, progressive medicine and unscientific, irrational, fossilized sectarian dogma. No one could show more clearly that nearly all of those who term themselves "homeopaths" have ceased to practise homeopathy. The conclusion which he draws from these correct premises is so evidently a *non-sequitur* that it is useless to enter upon criticism.

THE DISEASES AND DEFORMITIES OF THE FETUS: AN ATTEMPT TOWARD A SYSTEM OF ANTENATAL PATHOLOGY. VOL. II. CONGENITAL DISEASES OF THE SUBCUTANEOUS TISSUE AND SKIN. By J. W. BALLANTYNE, M.D., F.R.C.P.E., F.R.S.E. Pp. 264. Edinburgh: Oliver & Boyd, 1895.

IT is with pleasure that we greet the second volume of this truly unique and valuable work. Dr. Ballantyne, than whom there is none better able to cope with the intricacies of his difficult subject, has undertaken a task of Herculean proportions, but he has shown himself thoroughly able to carry through what he has begun. The cordial reception that was extended the first volume, two-and-a-half years ago, must be repeated to this, its admirable successor. The subject-matter now considered includes the pathologic states of the cutaneous and subcutaneous tissues of the fetus, and more can be learned from a brief perusal of the pages of this volume than from hours of search through the tomes and magazines of a large medical library. The literature has been thoroughly culled, as the long bibliographic lists attest. The plates and illustrations are interesting and valuable, and the arrangement scientific and satisfactory. The author pays a handsome tribute to the recent work of Unna on the "Histopathologie der Hautkrankheiten," and states his preference for Unna's classification of cutaneous diseases. The book should occupy a place on the book-shelf of every obstetrician.

TEXT-BOOK OF OPERATIVE SURGERY. By DR. THEODOR KOCHER, Professor of Surgery and Director of the Surgical Clinic in the University of Bern. Translated with special authority of the author from the second revised and enlarged German edition. By HAROLD J. STILES, M.B., F.R.C.S. Edin. Royal 8vo, pp. 303. London: Adam and Charles Black, 1895.

THIS work is essentially a record of the author's experience and of his individual methods chosen as a result thereof, ably translated, by special authority, from

the second enlarged and revised German edition. As compared with the first edition we find the work completely recast, greatly extended, and almost entirely reillustrated. The plates are triumphs of artistic anatomic representation and a very valuable feature of the composition. The volume must greatly add to Kocher's reputation and raise him nearer to the position of the first surgeon of Europe, and, in view of his enormous experience, will be accepted as a reliable guide by operators.

Many of the technical descriptions have been taken from dictation during operations on the living subject, while others are derived from demonstrations on the cadaver. The illustrations have all been executed directly from these latter operations. Nearly all of the most recent operative procedures are described and depicted in this greatly improved edition. As a whole, the work is superb; a valuable addition to surgical literature; a monument to precision; a splendid reflection of the very best modern operative technic. Preceding the description of special operations are sections devoted to general considerations, anesthesia, treatment of wounds, and direction of incision. The absence of an index is to be regretted. The omission is inexcusable.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, at its Forty-fifth Annual Session, held at Chambersburg, 1895. Vol. xxvi. Published by the Society. Pp. 504. Philadelphia: The Edwards & Docker Co., printers, 1895.

THE Committee of Publication of the Medical Society of the State of Pennsylvania deserves great credit for the very early appearance of this volume, which contains fifty-four papers, not including the various special addresses.

The address of the President, John B. Roberts, is in the form of an essay, entitled "The Present Attitude of Physicians and Modern Medicine Toward Homeopathy." This address ought to be published by the Society for free and general distribution, as it is intended to acquaint the laity with the facts of homeopathic quackery.

The address in hygiene, by H. H. Longsdorff, is a scholarly paper, calling attention to moral deterioration as a cause of racial and national decline.

Among the papers worthy of mention as representing original work, we find the following: "A Contribution to the Study of Deaf-mutism," by Arthur A. Bliss; "Laryngeal Diphtheria," by Edwin Rosenthal; "The Toxin-treatment of Malignant Tumors," by John B. Roberts; "The Ligation of Arteries in Malignant Disease," by John H. Packard; "Movable Kidney," by Charles P. Noble; and "Dangers in the Use of Vaccine-virus," by H. M. Alexander. A list of the regular physicians licensed by the new Board of Examiners up to April 10, 1895, and the Code of Ethics of the American Medical Association are appended.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK FOR THE YEAR 1895. Published by the Society.

THIS volume of 500 pages contains thirty-eight communications, together with reports of officers, and a chronologic list of the members of the Society since its organization in 1807. Excellent illustrations accom-

pany several of the papers. Prince A. Morrow and J. A. Fordyce, in connection with their communications, gave an exhibition of lantern-slides, and some of these are reproduced in the report. The anniversary-address by George H. Fox, entitled "Credulity and Skepticism in Modern Medicine," contains sound sentiments and shows clearly how the medical literature of the day tends to produce skepticism among the members of the profession.

The report of the State Board of Medical Examiners states that the number of physicians locating annually in the State of New York has been reduced one-half since the institution of State examinations; the board is in favor of a full high-school training as a preliminary requisite to matriculation.

ON SOME SYMPTOMS WHICH SIMULATE DISEASE OF THE PELVIC ORGANS IN WOMEN, AND THEIR TREATMENT BY ALLOPIESTOMYOKINETICS (MASSAGE) AND BY AUTOPIESTOMYOKINETICS (SELF-MOVEMENTS OF MUSCLES UNDER PRESSURE). By A. RABAGLIATI, M.A., F.R.C.S.Ed. Pp. 77. New York: William Wood & Co., 1895.

IN this volume Dr. Rabagliati touches upon some of the many curious manifestations of that deplorable condition, neurasthenia, which unfortunately has become so common in a certain class of women. After a comprehensive study of these puzzling cases, he has at length come to the conclusion that even when the nervous system is at fault the disease does not primarily reside there. He believes that the trouble lies rather in the muscles or muscle-sheaths, and that, along with them, the nerve-sheaths, the periosteum or bone-sheaths, and many of the joints, particularly the false joints, are so frequently affected that the disease of these fibrous tissues is the main immediate element to be considered in the cases presenting themselves for treatment. Hence he has elaborated a system of kinetics, to be carried out by the physician, or by a masseuse under the former's directions and by the patient herself, whereby this fibrous disease may be counteracted. The book is eminently practical, and treats of a subject that is now of great interest. The original illustrations supplement the text in a clear and interesting manner, and have evidently been executed with care.

NEWS ITEMS.

The Southern Surgical and Gynecological Association will hold its eighth annual meeting at the Hotel Shoreham, Washington, D. C., on November 12, 13, and 14, 1895. The following is the program:

Address of Welcome, by H. C. Busey, M.D., Washington, D. C. Response to Address of Welcome, by Louis McLane Tiffany, M.D., President. A Case of Gunshot-Wound of the Brain, Removal of Bullet, Recovery, by W. E. Parker, M.D., New Orleans, La. Personal Experience in the Treatment of Stab-Wounds of the Intestines and Peritoneum, by Bedford Brown, M.D., Alexandria, Va. Report of Five Cases in Abdominal Surgery in which the Murphy Button was Applied, by A. Vander Veer, M.D., Albany, N. Y. Resection and Intestinal Anastomosis, by H. Horace Grant, M.D., Louisville, Ky. Cecal Hernia, with Report of Cases, by

W. O. Roberts, M.D., Louisville, Ky. Necrosis of the Ribs in Three Cases, Resultant in Typhoid Fever, by W. L. Robinson, M.D., Danville, Va. Surgical Interference in Rectal Disorders, by J. McFadden Gaston, M.D., Atlanta, Ga. Cancer of the Pregnant Uterus, by George H. Noble, M.D., Atlanta, Ga. Hysterectomy for Fibroids, by E. S. Lewis, M.D., New Orleans, La. Abdominal Hysterectomy, by Joseph Price, M.D., Philadelphia, Pa. The Technic of Supravaginal Hysterectomy, by Howard A. Kelly, M.D., Baltimore, Md. Some of the Reasons for Preferring Vaginal to Abdominal Section for Pus in the Pelvis, by Joseph Taber Johnson, M.D., Washington, D. C. Indications and Technic of Vaginal Hysterectomy, by George H. Rohé, M.D., Catonsville, Md. Hysterectomy for Puerperal Sepsis, by A. M. Cartledge, M.D., Louisville, Ky. Management of Cases which have Recovered from Appendiceal Abscess in which the Appendix was not Removed, by J. D. S. Davis, M.D., Birmingham, Ala. Mental Complications as a Result of Surgical Operations, by J. T. Wilson, M.D., Sherman, Texas. Comparative Frequency of Stone in the White and Negro Races, by George Ben. Johnston, M.D., Richmond, Va. Report of Cases of Cystotomy for Stone, by W. F. Westmoreland, M.D., Atlanta, Ga. Parapharyngeal Tumors, Remarks on their Anatomy, Location, and Operative Treatment (from Three Observed Cases), by Christian Fenger, M.D., Chicago, Ill. Uninterrupted Anesthesia in Face and Mouth Operations, by Edmond Souchon, M.D., New Orleans, La. Annual Address of the President, by Louis McLane Tiffany, M.D., Baltimore, Md. Dr. J. Marion Sims and His Work: a Sketch, by John A. Wyeth, M.D., New York, N. Y. The Management of Intestinal Complications in Intrapelvic Operations, by L. S. McMurtry, M.D., Louisville, Ky. Vaginal Incision and Drainage in Pelvic Inflammation, by J. W. Long, M.D., Richmond, Va. Abdominal Pregnancy, by Cornelius Kollock, M.D., Cheraw, S. C. Report of a Case of Extrauterine Pregnancy, by John T. Henry, M.D., Chester, S. C. Endometritis, by James T. Jelks, M.D., Hot Springs, Ark. Fractures at Elbow-joint, by J. B. Murfree, M.D., Murfreesboro, Tenn. The Telephonic Bullet Probe, by A. H. Buckmaster, M.D., University of Virginia, Va. Surgical Hyperpyrexia, by George A. Baxter, M.D., Chattanooga, Tenn. Cholecystenterostomy, by W. B. Rogers, M.D., Memphis, Tenn. Surgery of the Biliary Ducts, by W. E. B. Davis, M.D., Birmingham, Ala. The Technic of the Buried Suture, by Henry O. Marcy, M.D., Boston, Mass. The Use of Subcutaneous Saline Infusion in Shock and Hemorrhage, by George H. Rohé, M.D., Catonsville, Md. Report of Cases of Tracheotomy for Foreign Bodies in the Trachea, by W. F. Westmoreland, M.D., Atlanta, Ga. Abscess of the Lung, by James A. Goggans, M.D., Alexander City, Ala. Report of a Case of Ligation of the Common Iliac Artery, Recovery, by W. E. B. Davis, M.D., Birmingham, Ala.

Obituary.—Second-Lieutenant Leonard M. Prince, Second Infantry, United States Army, died at the Presbyterian Hospital, in Chicago, on Friday last, from injuries received at Annapolis in 1892 in one of the annual games formerly played between the cadets of the United States Military Academy and the Naval Academy. In a scrimmage for the ball an unknown player fell on the small of Lieutenant Prince's back with both knees.

When the ball was put in play again it was discovered that Prince could not rise, and he was carried off the field. An examination showed that two floating ribs on his left side were broken and internal injuries inflicted. He was sick for some time, but after he had been graduated it was thought all danger from his injuries was past. While exercising in his post-gymnasium at Fort Omaha 8 months ago, however, he again experienced the old pains. He returned to his home in Bloomington, Ill., where the family-physician pronounced his sickness a result of the injuries received in the football game of 1892. During his career as an army-officer Lieutenant Prince was the recognized leader of his regiment in everything pertaining to athletics. He designed the regimental gymnasium at Fort Omaha, and was instructor in athletics. He leaves a widow and a two weeks-old child.—*N. Y. Herald.*

The Revival of the Index Medicus.—We are advised of the following list of subscribers in addition to those previously published:

Dr. I. E. Atkinson, Baltimore.
Dr. Frank Fremont-Smith, Bar Harbor.
Doliber, Goodale & Co., Boston.
Dr. Charles G. Stockton, Buffalo.
Dr. Gustave Fütterer, Chicago.
Dr. Werth, Kiel, Germany.
Philadelphia Neurological Society.
Dr. Adolph Koenig, Pittsburg.
Dr. Samuel H. Friend, Milwaukee.
Dr. J. H. Bryan, Washington.
Medical Society, District of Columbia.
Dr. G. R. Fowler, Brooklyn.
Dr. J. W. Brannan, New York.
Hoagland Physiologic Laboratory, Brooklyn.
Dr. Martin Deschere, New York.

The Tri-state Medical Society of Iowa, Illinois, and Missouri at its last meeting elected the following officers: *President*, Dr. Robert H. Babcock, Chicago; *First Vice-President*, Dr. A. H. Cordier, Kansas City; *Second Vice-President*, Dr. W. A. Todd, Chariton, Iowa; *Treasurer*, Dr. C. S. Chase, Waterloo, Iowa; *Secretary*, Dr. G. W. Cale, St. Louis. The next meeting will be held in Chicago the first Tuesday, Wednesday, and Thursday in April, 1896.

The William F. Jenks Memorial Prize of the College of Physicians of Philadelphia for 1895 has been awarded to Dr. Abram Brothers, of New York, for an essay on "Infant-mortality During Labor, and its Prevention."

The Alvarenga Prize of the College of Physicians of Philadelphia for 1895 has been awarded to Dr. Guy Hinsdale, of Philadelphia, for an essay on "Syringomyelia."

Prof. Edward G. Conklin, of the Northwestern University, has been elected Professor of Comparative Embryology, to succeed the late Dr. John Ryder.

Dr. Franklin Bechtel Gilbert, a retired physician and veteran of the Civil War, died November 4th, at the age of 69 years.

Dr. Edward C. Kirk has been elected Professor of Clinical Dentistry.

Dr. Harrison Allen has been elected Emeritus Professor of Comparative Anatomy in the University of Pennsylvania.

BOOKS AND PAMPHLETS RECEIVED.

Expert Medical Testimony. By B. W. Holliday, A.B., M.D. Reprinted from the *Cleveland Medical Gazette*, 1895.

Epilepsy in its Relation to Insanity. By B. W. Holliday A.B., M.D. Reprinted from the *Cleveland Medical Gazette*, 1895.

An Attempt to Analyze the Statistics of Diphtheria in Easton, from 1888 to 1894, inclusive. By J. W. Moore, M.D. Reprinted from the *Lehigh Valley Medical Magazine*, 1895.

The Radical Cure of Hydrocele. By D. C. Hawley, A.B., M.D. Reprinted from the *Journal of the American Medical Association*, 1895.

Normal Distribution of the Blood and its Exchange with the Surrounding Tissues through Exosmosis and Endosmosis. Can it be Controlled by Remedial Gymnastics? By Henric Sparre, M.D. Pamphlet. Pittsburg, Pa.

Transactions of the Vermont State Medical Society for the Year 1894. Published by the Society. Annual Meeting in 1895 at Burlington, October 10th and 11th. Burlington, Vt.: J. E. Peters' Steam Book and Job Printery, 1895.

Denver School of Medicine. Medical Department, University of Denver. Fifteenth Annual Announcement. Session of 1895-96. Catalog of Alumni and of the Matriculates and Graduates of the Session of 1894-95. Denver, Col., 1895.

A Summary of the Vital Statistics of the New England States for the Year 1892. Being a Concise Statement of the Marriages, Divorces, Births, and Deaths in the Six New England States. Boston: Dammell & Upham. London: P. S. King & Son, 1895.

Fibrino-plastic Exudates. With Reports of Two Cases of Laminated Fibrino-plastic Rhinitis; including Laboratory Investigation. By D. Braden Kyle, M.D. Reprinted from the *New York Medical Journal*, 1895.

Treatment of Advanced (Hopeless) Cases of Phthisis. By Edward O. Otis, M.D. Reprinted from the *Boston Medical and Surgical Journal*, 1895.

The Infiltration-Method of Local Anesthesia in Genito-urinary Surgery. By Bransford Lewis, M.D., of St. Louis. Read before the American Association of Genito-urinary Surgeons at Niagara Falls, May 28, 1895.

The History of Medicine and Surgery in Georgia. By Luther B. Grandy, M.D. Reprinted from the *Atlanta Medical and Surgical Journal*, 1895.

Careless and Unscientific Midwifery, with Special Reference to Some Features of the Work of Midwives. By W. S. Smith, M.D. Reprinted from the *Maryland Medical Journal*, 1895.

Georgetown University School of Medicine, Washington, D. C. Circular of Information, 1895-1896.

Meharry Medical, Dental, and Pharmaceutical Departments, Central Tennessee College, Nashville, Tenn. Catalog of 1894-1895. Announcement for 1895-1896. Nashville, Tenn.: Cumberland Presbyterian Publishing House, 1895.

Circular on the Care and Disposition of Persons Found Unconscious on the Streets or Elsewhere. Prepared by a Special Committee of the Medical Society of the County of Kings, N. Y. Reprinted from the *Brooklyn Medical Journal*, 1895.

Fifty-fifth Annual Announcement of the Missouri Medical College. Session of 1895-1896, and Catalog of Session of 1894-1895. St. Louis, Mo.

Annual Report of the Pennsylvania State College for the Year 1894. Part II. Agricultural Experiment-Station. Clarence M. Busch, State Printer of Pennsylvania, 1895.

University of Colorado. Colorado School of Medicine, Annual Announcement, 1895-1896.

Fourth Annual Message of Edwin S. Stuart, Mayor of Philadelphia, with Annual Report of the President of the Department of Charities and Correction, for the Year ending December 31, 1894. Philadelphia: Dunlap Printing Co., 1895.

Fourth Annual Message of Edwin S. Stuart, Mayor of the City of Philadelphia, with Annual Reports of Abraham M. Beidler, Director of the Department of Public Safety and of the Board of Health for the Year ending December 31, 1894. Philadelphia: Dunlap Printing Co., 1895.

Die Behandlung der Lungentuberculose mit Ichthyol. Von Dr. L. Guido Scarpa. Separat-Abdruck aus der *Therapeutischen Wochenschrift*, 1895, No. 17.

De l'Emploi de l'Ichthyol dans le traitement des tumeurs fibreuses adherentes. Dr. Jules Cheron. *Extrait Revue Médico-Chirurgicale des Maladies des Femmes*. Fevrier, 1895.

Ichthyol bei Epididymitis Gonorrhoea. Von Dr. S. Maylander. Separat-Abdruck der *Pester medizinisch-chirurgischen Presse*, 1894, No. 50.

Medical Terminology. Its Etymology and Errors. By P. J. McCourt, M.D. Reprinted from the *Medical Record*, 1895.

Ospedale Civile di Livorno. Dott. Adolfo Liscia. *Il Solfo-Iodato d'ammonio nella suppurazione.* Estratto dalla *Gazzetta degli Ospedali e delle Cliniche*, 1895, n. 17.

Gross Medical College, Denver, Col. Circular of Information and Register of Students, Session of 1895-1896. Reprinted from the *Gross Medical College Bulletin*, 1895.

Cystic Tumors of the Vaginal Vault, with Reports of Two Cases. By Frederick Holme Wiggin, M.D. Reprinted from the *New York Medical Journal*, 1895.

A Practical Low-priced Device to Secure the Trendelenburg Posture. By William A. Edwards, M.D. Reprinted from the *University Medical Magazine*, 1895.

Syphilis. By Alfred Copper, F.R.C.S. Eng. Second edition, enlarged and illustrated by twenty full-page plates, twelve of which are colored. Edited by Edward Cotterell, F.R.C.S. Eng. Philadelphia: P. Blakiston, Son & Co., 1895.

A Text-book on Chemistry. Intended for the Use of Pharmaceutical and Medical Students. By Samuel P. Sadtler, Ph.D., F.C.S., and Henry Trimble, Ph.M. Philadelphia: J. B. Lippincott Co., 1895.

Strabismus as a Symptom, its Causes and its Practical Management. By Leartus Connor, M.D. Reprint *Journ. Am. Med. Assoc.*, 1895.

Credulity and Skepticism in Modern Medicine. Address by George Henry Fox, M.D., before Med. Soc. State of New York, Eighty-ninth Annual Meeting, Albany, Feb. 6, 1895.

Report of Two Cases of Crushing Injury to the Arm. By E. J. Mellis, M.D. Reprint *Railway Surgeon*, 1895.

Brain-resistance to Uremic Poison. By Brummell Jones, M.D. Reprint *Kansas City Med. Index*, 1895.

Imperforation of the Rectum. By George Ben. Johnston, M.D. Pamphlet. Richmond, Va.

On Movable Kidney. By George Ben. Johnston, M.D. Reprint *Trans. Southern Surg. and Gynecolog. Assoc.*, 1894, and *Annals Surg.*, 1895.

The Theory and Practice of Counter-irritation. By H. Cameron Gillies, M.D. London and New York: MacMillan & Co., 1895.

A Study of the Microscopic Phenomena of Inflammation, with Special Reference to the Diapedesis of the White Blood-corpuscle. By Charles F. Craig, M.D. Pamphlet. Danbury, Conn.

Bulletin No. 9. U. S. Department of Agriculture. Rules and Regulations concerning the Operations of the Bureau of Animal Industry; also the Acts of Congress under which they are Made. By D. E. Salmon, M.D. Washington: Government Printing Office, 1895.

Annual Announcement and Catalog of the Baltimore University School of Medicine, Baltimore, Md. Session, 1895-1896.

University of Michigan, Department of Medicine and Surgery. Annual Announcement, 1895-1896. Ann Arbor, Mich.: Published by the University, 1895.

A Report of the Abdominal Sections in the Gynecological Department of Mercy Hospital, from July 1 to October 1, 1894. By Hubert A. Royster, M.D. Service of X. O. Werder, M.D. Reprint *Pittsburg Med. Rev.*, 1894.

First Impressions of a Medical Examiner. By Edward Cranch, M.D. Reprinted from the *Homeopathic Physician*, 1895.